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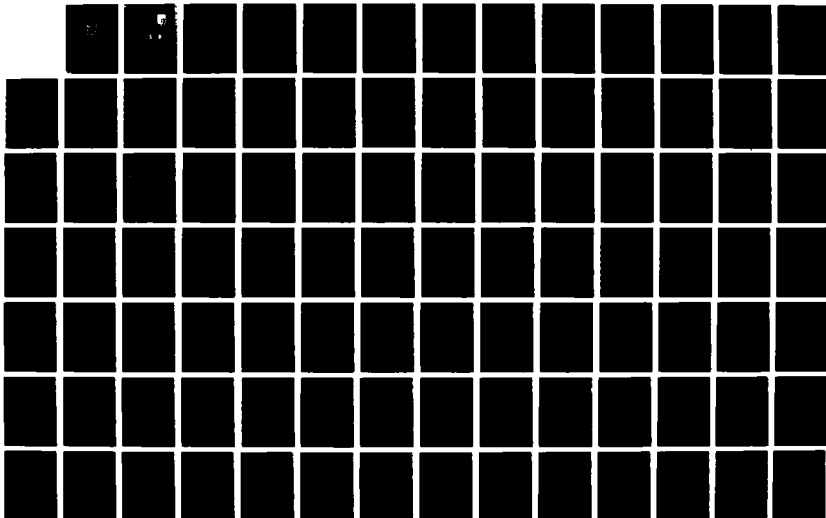
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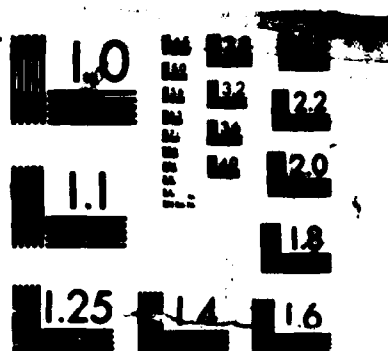
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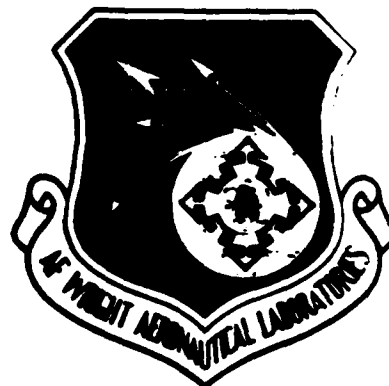




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AFVAL-TR-86-4006
Volume VI
Part 6

AD-A182 061



INTEGRATED INFORMATION
SUPPORT SYSTEM (IISS)
Volume VI - Network Transaction Manager Subsystem
Part 6 - NTH Message Processing Unit Product Specification

General Electric Company
Production Resources Consulting
One River Road
Schenectady, New York 12345

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Final Report for Period 22 September 1980 - 31 July 1985
November 1985

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This technical report has been reviewed and is approved for publication.




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5 Aug 1986

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FOR THE COMMANDER.



GERALD C. SHUMAKER, BRANCH CHIEF
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7 Aug 86

DATE

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<p>This product specification provides structure charts and module descriptions of the Message Processing Unit (MPU). The MPU processes input messages from application processes to an Application Process Cluster.</p> <p><i>msg. sent to...</i></p>					
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PREFACE

This product specification covers the work performed under Air Force Contract F33615-80-C-5155 (ICAM Project 6201). This contract is sponsored by the Materials Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Gerald C. Shumaker, ICAM Program Manager, Manufacturing Technology Division, through Project Manager, Mr. David Judson. The Prime Contractor was Production Resources Consulting of the General Electric Company, Schenectady, New York, under the direction of Mr. Alan Rubenstein. The General Electric Project Manager was Mr. Myron Hurlbut of Industrial Automation Systems Department, Albany, New York.

Certain work aimed at improving Test Bed Technology has been performed by other contracts with Project 6201 performing integrating functions. This work consisted of enhancements to Test Bed software and establishment and operation of Test Bed hardware and communications for developers and other users. Documentation relating to the Test Bed from all of these contractors and projects have been integrated under Project 6201 for publication and treatment as an integrated set of documents. The particular contributors to each document are noted on the Report Documentation Page (DD1473). A listing and description of the entire project documentation system and how they are related is contained in document FTR620100001, Project Overview.

The subcontractors and their contributing activities were as follows:

TASK 4.2

Subcontractors

Role

Boeing Military Aircraft
Company (BMAC)

Reviewer.

D. Appleton Company
(DACOM)

Responsible for IDEF support,
state-of-the-art literature
search.

General Dynamics/
Ft. Worth

Responsible for factory view
function and information
models.

Subcontractors

Role

**Illinois Institute of
Technology**

**Responsible for factory view
function research (IITRI)
and information models of
small and medium-size business.**

North American Rockwell

Reviewer.

Northrop Corporation

**Responsible for factory view
function and information
models.**

Pritsker and Associates

Responsible for IDEF2 support.

SofTech

Responsible for IDEF0 support.

TASKS 4.3 - 4.9 (TEST BED)

Subcontractors

Role

**Boeing Military Aircraft
Company (BMAC)**

**Responsible for consultation on
applications of the technology
and on IBM computer technology.**

**Computer Technology
Associates (CTA)**

**Assisted in the areas of
communications systems, system
design and integration
methodology, and design of the
Network Transaction Manager.**

**Control Data Corporation
(CDC)**

**Responsible for the Common Data
Model (CDM) implementation and
part of the CDM design (shared
with DACOM).**

**D. Appleton Company
(DACOM)**

**Responsible for the overall CDM
Subsystem design integration
and test plan, as well as part
of the design of the CDM
(shared with CDC). DACOM also
developed the Integration
Methodology and did the schema
mappings for the Application
Subsystems.**

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1 November 1985

Subcontractors

Role

Digital Equipment
Corporation (DEC)

Consulting and support of the
performance testing and on DEC
software and computer systems
operation.

McDonnell Douglas
Automation Company
(McAuto)

Responsible for the support and
enhancements to the Network
Transaction Manager Subsystem
during 1984/1985 period.

On-Line Software
International (OSI)

Responsible for programming the
Communications Subsystem on the
IBM and for consulting on the
IBM.

Rath and Strong Systems
Products (RSSP) (In 1985
became McCormack & Dodge)

Responsible for assistance in
the implementation and use of
the MRP II package (PIOS) that
they supplied.

SofTech, Inc.

Responsible for the design and
implementation of the Network
Transaction Manager (NTM) in
1981/1984 period.

Software Performance
Engineering (SPE)

Responsible for directing the
work on performance evaluation
and analysis.

Structural Dynamics
Research Corporation
(SDRC)

Responsible for the User
Interface and Virtual Terminal
Interface Subsystems.

Other prime contractors under other projects who have
contributed to Test Bed Technology, their contributing
activities and responsible projects are as follows:

<u>Contractors</u>	<u>ICAM Project</u>	<u>Contributing Activities</u>
Boeing Military Aircraft Company (BMAC)	1701, 2201, 2202	Enhancements for IBM node use. Technology Transfer to Integrated Sheet Metal Center (ISMC).

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<u>Contractors</u>	<u>ICAM Project</u>	<u>Contributing Activities</u>
Control Data Corporation (CDC)	1502, 1701	IISS enhancements to Common Data Model Processor (CDMP).
D. Appleton Company (DACOM)	1502	IISS enhancements to Integration Methodology.
General Electric	1502	Operation of the Test Bed and communications equipment.
Hughes Aircraft Company (HAC)	1701	Test Bed enhancements.
Structural Dynamics Research Corporation (SDRC)	1502, 1701, 1703	IISS enhancements to User Interface/Virtual Terminal Interface (UI/VTI).
Systran	1502	Test Bed enhancements. Operation of Test Bed.

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SECTION 1

SCOPE

1.1 Identification

This specification establishes the 'as built' design of the Message Processing Unit component of the Network Transaction Manager Subsystem.

1.2 Functional Summary

The Network Transaction Manager (NTM) Subsystem provides the control and support services to application processes that are grouped together logically in clusters called Application Process Cluster (APCs). These application processes communicate with one another by sending messages via the NTM. The NTM delivers these messages to the destination application processes while also providing other services for the APs such as message pairing, AP initiation, and message queuing.

SECTION 2

DOCUMENTS

2.1 Reference Documents

The following pertinent reference materials are available at the ICAM Program Office.

1. Interim Reports
2. Life Cycle Documents
 - (a) ITR620150002U Project Scope
 - (b) PMP620150000 Master Plan and Schedule
 - (c) SAD620150000 State-of-the-art Review
 - (d) SRD620140000 System Requirements Document
 - (e) SDS620140000 System Design Specifications
 - (f) DS6201420000 Development Specification - Network Transaction Manager Subsystem

The following reference materials are available from Digital Equipment Corporation.

- (a) VAX/VMS I/O User's Guide (Volume 1), Order No. AA-M540B-TE
- (b) VAX/VMS I/O User's Guide (Volume 2), Order No. AA-M541B-TE
- (c) VAX COBOL Language Reference Manual, Order No. AA-H631C-TE
- (d) VAX-11 FORTRAN Language Reference Manual, Order No. AA-DO34C-TE

Other reference materials are as follows.

- (a) International Organization for Standardization, Open Systems Interconnection, Information Processing Systems - Basic Reference Model, TC

97/16 N 719

- (b) International Organization for Standardization, Open Systems Interconnection, Draft, Connection-Oriented Transport Service Definition TC 97/16 N 860
- (c) International Organization for Standardization, Open Systems Interconnection, Draft, Connection-Oriented Transport Protocol Specification Version 1.2, TC 97/16 N 861
- (d) International Organization for Standardization, Open Systems Interconnection, Draft, Connection-Oriented Session Protocol Definition TC 97/16 N 856
- (e) National Bureau of Standards, Specification of the Transport Protocol, Volume 2: Basic Class Protocol, Draft Report, September 1981, Report No. ICST/HLNP-81-12
- (f) National Bureau of Standards, Specification of the Transport Protocol, Volume 3: Extended Class Protocol, Draft Report, September 1981, Report No. ICST/HLNP-81-13
- (g) National Bureau of Standards, Specification of the Transport Protocol, Volume 4: Network Interfaces, Draft Report, September 1981, Report No. ICST/HLNP-81-14

2.2 Terms And Abbreviations

1. Interhost Communication Primitives (IHC's) - A set of routines used by the NTM to interface to the operating system or to other operating systems which have an NTM running. They are always system dependent.
2. Interprocess Communication Primitives (IPC's) - A set of routines used to communicate between two processes on the same computer. They are always system dependent.

SECTION 3

REQUIREMENTS

3.1 Structural Descriptions

The Message Processing Unit has three stages of operation: Start-up, Input Processing, and Shutdown. The Monitor Application Process (Monitor AP) initiates the first instance of and MPU, the Monitor MPU. All other MPUs are then initiated by the Monitor MPU.

3.2 Functional Flow Description

The Start-up stage of an MPU begins with getting the MPU's process name from the operating system and creating both high- and low-priority mailboxes. The MPU then sends a message to the Monitor AP requesting the status of the tables on the cluster and waits for a response from the Monitor AP. If the response does not arrive within a given amount of time, the MPU will send an "AP CLUSTER TERMINATING" message to the Monitor AP and will then proceed to terminate. If the message does arrive saying that the tables are correct, then the MPU will populate its tables with the information saved in local files via table initialization procedures. The MPU then sends an "AP CLUSTER ALIVE" message to the Monitor AP and waits for final start up instructions.

As a final instruction, if an error occurs during the IISS start-up, the Monitor AP will instruct each Message Processing Unit to terminate. Also, if the final instruction message does not arrive within a certain period of time, the MPU will begin the AP Cluster termination process on its own. However, if the IISS start-up is successful, then the Monitor AP will send a "HOST ACTIVE" message to signal the MPU that Start-Up is complete. The MPU is now ready for its second phase of operation: Input Processing.

During the Input Processing stage, the MPU remains available to the users who are logged onto the IISS and to other application processes. User application processes can communicate with one another and initiate other application processes by sending messages through the MPU. The MPU processes these messages in two phases: Manage Message, and Process Message.

The Manage Message Phases authorizes the message, verifies the message category, assigns a serial number, and completes the header of messages from on the cluster. If the message is from another cluster, Manage Message verifies that the message arrives at the correct destination. If a message error occurs, the NPU will send an error message to the source AP. If a system error occurs, the NPU will send an error message to the Monitor AP. All messages are logged in Manage Message. This is also where the type of processing to be done on the message is determined. Messages destined to go off-host are sent to the Communication cluster's NPU, messages destined to stay on-host but off-cluster are delivered to the off-cluster NPU, and messages destined for on-cluster are processed by phase two of Input Processing. Manage Process

Manage Process handles each message destined for the AP Cluster according to its message category and type. Some messages cause the initiation of other application processes in the IISS, others are simply delivered to the destination AP. All message processing done by the NPU requires table access. Information about individual AP instances and types of APs are kept in several tables.

For example, every time an initiation message arrives at the Manage Process phase, the NPU must check the AP Characteristics Table to be sure that the AP can be started by that type of initiation message. If the AP can be initiated by that type of message, the NPU must then check the AP Information Table to be sure that the maximum number of instances allowed has not yet been reached. Finally, if the AP is initiated successfully, an AP Status Table entry is created for that AP. The AP Status Table has an entry for every instance of an application process that is communicating via the IISS. There are many different types of application processes running under the IISS and all are at different stages of processing at any given moment. All of this information is stored in tables for the NPU's use in order that all kinds of messages may be processed.

Also during the Input Processing phase of the NPU, a timer is set to a fixed length of time. When the timer goes off, a checking routine is invoked. The checking routine looks at certain tables and processes each entry in the table according to its status. For example, the Message Pair table has an entry for each message that requires a response. If the time-out time on the entry has passed (compared to the system's time) then the NPU deletes the entry and send a "TIME-OUT ERROR" message to the

Monitor AP. The checking routine also processes messages that have been stored up in queues. For example, if the NPU tries to deliver a message to an AP whose mailbox is full, the message will be queued so that it can be sent again later by the checking routine. After completion of the checking routine, the timer is reset so that it may be invoked again after a fixed period of time.

Besides handling application process messages, the NPU has a high-priority mailbox from which it reads system command messages from the IISS operator via the Monitor AP. For instance, the operator can request a list of all active APs on the NPUs cluster or request the shutdown of a particular application process. The system command message that requires the NPU to go into its final stage of operation, SHUTDOWN, is a "SHUTDOWN AP CLUSTER" message from the operator via the Monitor AP.

The Shutdown stage of the Message Processing Unit operates basically like the Input Processing stage: messages are still processed by the NPU but in a different way. When the NPU received the "SHUTDOWN APC" message, it looks at each application process in the AP Status Table and, according to each AP's characteristic, aborts the AP or informs it that it must shut itself down. The NPU then checks its mailboxes for a message from each of the APs that were told to shutdown. Only AP status messages and system commands from the Monitor AP (such as "CANCEL SHUTDOWN") are processed normally during the shutdown phase. All other types of messages are logged and ignored by the NPU. The NPU systematically checks to see if all the application processes on the cluster are dead. If no more messages are in the mailboxes to be processed and all the APs are no longer running, the NPU invokes its final shutdown processing. The AP Cluster initialization data is saved in a local file where it will be used during the next IISS or cluster startup. The NPU's input mailboxes are deleted and an "APC TERMINATING" message is sent to the Monitor AP. The Message Processing Unit then ends execution.

3.3 Interfaces

The Network Transaction Manager maintains communications with any other process through mailboxes. The mailboxes are managed by the Interprocess Communication Primitives (IPC's).

Communications with the remote computer is accomplished through the Communication sub-system process which will be

running when there are other hosts to communicate with.

3.4 Program Interrupts

As mentioned previously, NTM is interrupt driven with interrupts coming either from the IPC's on behalf of any other process which may be another MPU or any other AP. Waiting for these interrupts is performed by one of the IPC wait primitives. If a response must be received within a particular time interval, the IPC's associated with timing are used along with one of the wait's.

3.5 Timing and Sequence Description

The NTM does not depend on any particular timing sequences.

3.6 Special Control Features

The Network Transaction Manager Subsystem does not include any special control features as defined in the ICAM Documentation Standards manual.

3.7 Storage Allocation

3.7.1 Data Base Definition

The NTM uses files and tables to store static configuration and dynamic operating information. These are described in the Development Specification (DS 620142000) and in the include files referenced in Section 3.10.9 of this document.

3.7.1.1 File Description

NTM uses many files for table handling. This involves reading the initial values of the tables as well as using files for table overflow handling. Files are also used to buffer messages and to log normal and error messages.

3.7.1.2 Table Description

The NTM Tables provide both static and dynamic data to the NTM MPU. The static data consists of configuration data, such as the location of an AP within the IISS, characteristics of a given AP, etc. The dynamic data consists of the run-time status of the NTM components, the IISS host machines, and the user's APs. There are currently fifteen NTM Tables. Their content is described in detail in the Development Specification.

3.7.1.3 Item and Constant Description

Symbols are defined in the Development Specification and in the include files.

3.7.2 CPC Relationship

3.8 Object Code Creation

The generic portion of NTM is written in COBOL and 'C'. This has been successfully compiled on a VAX 11/780 under VMS (Rel 2.0), an IBM 3084 under MVS (Rel 1.8), and a Honeywell Level 6 under Mod 400 (Rel 1.2).

The machine specific code of the NTM is written in COBOL. The different methods of handling files must be dealt with separately on each machine. This has been successfully compiled on a VAX 11/780 under VMS, an IBM 3084 under MVS, and a Honeywell Level 6 under Mod 400 at appropriate release levels as noted above.

The minimum computer hardware and software required to create and run NTM in the IISS environment is documented in the Installation Guide for IISS on the VAX and in the Installation Guide for IISS on the IBM.

3.9 Adaption Data

In order to tailor NTM to either the VAX or the IBM, there are a few system dependent files required. For example, the table file handlers would have to be tailored to the particular machine you are on.

The command procedures to the create NTM executables are specific to each computer and can be found under Software Configuration Management.

3.10 Detail Design Description

The upcoming program details were derived from all modules that were selected when the following Documentation Group(s) was chosen:

NTMMPU

3.10.1 Main Program List

The following is a list of all "Main Programs" which are modules that are not called by any other module being documented here. These modules are either program entry points or, if they are hooked into another set of programs via subroutine calls, they are the points the external programs can call and therefore enter through. To differentiate between the two types of entry points, look at the individual Module Documentation (section 3.10.8) and look at Module Type for each of the Main Program modules listed. Note whether the routine is a Program, Subroutine, or Function. If it is a Program, it is truly a main program entry point. If not, then it is merely called by other programs not being documented here.

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NTM/MPU Main Program List

Module Name -----	Purpose -----
APCLOG	NOTIFY ACTLOG.DAT THAT AN APC HAS STARTED.
AUTTEL	TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE.
HSTTEL	TABLE MANAGEMENT FUNCTIONS FOR THE HOST STATUS TABLE
INCHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
LETTTEL	TABLE MANAGEMENT FUNCTIONS FOR THE LINK STATUS TABLE.
MPUGEN	BUILD IISS SYSGEN FILE.
MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
OUTGDM	OUTPUT GUARANTEED DELIVERY MESSAGE - STUBBED OUT.
PRGDAK	PROCESS GUARANTEED DELIVERY ACTS - STUBBED OUT.

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3.10.2 Module List

The following is a list of all the modules being documented here along with their purpose. Each module has a unique name, no matter what language it was written in.

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NTM/MPU Module List

Module Name -----	Purpose -----
ABORT	PROCESS MESSAGE TYPE AB - ABORT APPLICATION
ACTINI	LOAD THE AUTHORITY CHECK TABLE FROM THE AUTHORITY CHECK FILE.
ACTTEL	TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE
ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
APCLOG	NOTIFY ACTLOG.DAT THAT AN APC HAS STARTED.
APCTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER STATUS TABLE.
APDEAD	PROCESS AP DYING MESSAGE
APIINI	INITIALIZE THE AP INFORMATION TABLE.
APITBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING TABLE
APOINI	INITIALIZE AP OPERATING TABLE.
APOTBL	TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
APSINI	INITIALIZE THE AP STATUS TABLE.
APSTAT	PROCESS AP STATUS MESSAGES.
APSTBL	TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
APTINI	INITIALIZE THE AP CHARACTERISTICS TABLE.

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NTM/MPU Module List

Module Name -----	Purpose -----
APTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
AUTMSG	AUTHORITY TABLE CHECK TO SEE IF MESSAGE CAN BE SENT.
AUTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE.
CATTBL	TABLE MANAGEMENT FUNCTIONS FOR THE MESSAGE CATEGORY TABLE.
CDMFIL	REQUEST NEW TABLE FROM CDM.
CHDPRC	CHILD TABLE PROCESSING.
CHDSTM	PROCESS CHILD STATUS MESSAGE.
CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
CLDINI	INITIALIZE CHILD TABLE.
CLDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
CLNHSD	PROCESS REMOTE HOST SHUTTING DOWN MSG - STUBBED OUT.
CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
CMPHDR	COMPLETE MESSAGE HEADER.
CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
CRTPRC	CREATE PROCESSES (DETACHED) ON THE VAX.
DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
DELPRC	DELETE PROCESSES ON THE VAX.

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NTM/MPU Module List

Module Name -----	Purpose -----
DETCOM	DETERMINE CORRECT COMM AP.
DIRTBL	TABLE MANAGEMENT FUNCTIONS FOR THE DIRECTORY TABLE.
DLVMSG	DELIVER MESSAGE TO THE AP.
DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
FSTART	FINAL START-UP PROCEDURE.
GDMSGGS	GUARANTEED DELIVERY MESSAGE HANDLER.
GENSER	GENERATE MESSAGE SERIAL NUMBER.
GETNAM	VAX PROCEDURE TO GET AP'S OS PROCESS NAME.
GRDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED DELIVERY TABLE.
HSTNRQ	HOST NAME REQUEST PROCESSING.
HSTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE HOST STATUS TABLE
IATCHK	AGE I'M ALIVE TABLE ENTRIES.
IATINI	INITIALIZE THE I'M ALIVE TABLE.
IATTBL	TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
IISSYS	SUBROUTINE USED TO REPLACE OR MODIFY THE IISS SYSGEN DATA
IMALIV	PROCESS I'M ALIVE MESSAGE.
INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.

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NTM/MPU Module List

Module Name -----	Purpose -----
INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
INITAP	INITIATE THE APPLICATION PROCESS.
INITST	INITIAL START-UP PROCEDURE.
KIDST	CHECK IF ALL CHILD APS ARE DEAD.
LGMESG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
LSTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE LINK STATUS TABLE.
MAPHST	MAP TO THE HOST TABLES.
MNGMSG	MANAGE MESSAGE.
MNGPRC	MANAGE PROCESS.
MPRINI	INITILIAZE THE MESSAGE PAIR TABLE.
MPRTBL	TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR TABLE.
MPUGEN	BUILD IISS SYSGEN FILE.
MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.

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NTM/MPU Module List

Module Name -----	Purpose -----
OUTGDM	OUTPUT GUARANTEED DELIVERY MESSAGE - STUBBED OUT.
PADZER	CONVERT BINARY FIELD TO A CHARACTER FIELD AND PAD WITH ZEROS.
PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
PFINIT	PERFORM AP INITIATION.
POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
PRGDAK	PROCESS GUARANTEED DELIVERY ACTS - STUBBED OUT.
PRINIT	PROCESS AP INITIATION MESSAGE.
PRINPT	PROCESS CLUSTER INPUT.
QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
RANDIN	PROVIDE A RANDOM NUMBER FOR THE NTM TABLE ROUTINES.
RMVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.
RMVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
RTESND	ROUTE AND SEND A MESSAGE.
SAVEQS	SAVE QUEUES - STUBBED OUT.
SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
SDMODE	SHUTDOWN MODE PROCESSING.
SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.

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NTM/MPU Module List

Module Name -----	Purpose -----
SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
SHTAPC	SHUTDOWN THE AP CLUSTER.
SHUTAP	PROCESS SHUTDOWN AP MSG - STUBBED OUT.
SNDCAN	SEND CANNED MESSAGE TO AP.
SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
SNDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SNDSAP	SEND MESSAGE TO SOURCE AP.
SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
STRAPC	START UP THE AP CLUSTER.
SUPDEF	SUPPLY SYSTEM DEFAULTS.
SYSKOM	PROCESS SYSTEM COMMANDS.
TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
TIMCHK	TIME CHECKER.
TRMAPC	TERMINATE THE AP CLUSTER.
VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
VMSGCT	VERIFY MESSAGE CATEGORY.
VYOFFC	VERIFY MESSAGES FROM OFF THE CLUSTER.
WRITPR	WRITE PROCESS.

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NTM/MPU Module List

Module Name

Purpose

WTINIT

CHECK WAIT-FOR-INIT QUEUE FOR INIT
MESSAGES FOR A GIVEN AP.

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3.10.3 External Routines List

The following is a list of all routines or functions not documented here that are called by modules that are documented here. The first caller, in alphabetical order, is listed as well. The specification in which any module is documented may be found in the Module Documentation Index (Document Number CM 620100001). See section 3.10.6 for a list of the modules that call each of these external routines.

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WTM/NPU External Routines List

Module Name -----	First User -----
ABCTIN	LAMESG
CHLTIN	FSTART
CHTMBX	INITST
DELMBX	TRMAPC
ENDGOW	NPUINI
ERRPRO	SHDCTR
GETMBC	FSTART
GETTIN	PAIRCK
ITHADR	MAPNET
NTROEN	NPUGEN
RCVMSG	PRINTP
RELEVB	SPTSD
SETTIN	PRINTP
SHDMSG	SHDCAN
SYSSCREPRC	CRTPRC
SYSSDELPRC	DELPRC
SYSSGETJPI	GETEAM
SYSSNGELSC	MAPNET
SYSTEMLOG	CRTPRC
WAIT02	FSTART
WAIT03	PRINTP

3.10.4 Include File List

The following is a list of all include files called in by modules being documented here. Each include file has a unique name regardless of the language being used. The purpose of each include file is listed as well. A more complete description of each include file is given in section 3.10.9. The purpose listed is the one that is in the source code of the include file.

A purpose of "**** PURPOSE NOT FOUND BY STRIPPER ****" indicates that a purpose statement was not written into the include file itself. The most common reason for this is that the include file comes from system libraries that were not developed by the project, such as 'C' libraries that are provided with the 'C' compiler.

See section 3.10.6 for a set of lists which show all the modules which call in each of these include files.

NTM/MPU Include File List

File Name	Purpose
-----	-----
AAMSG	CANNED MSG FOR ACTIVEE AP LIST.
ACTBUF	INPUT DEFINITIONS FOR TABLE ROUTINES.
APCBUF	APC RECORD BUFFER.
APDFLG	INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
APIBUF	API RECORD BUFFER.
APOBUF	AP OPERATING INFO RECORD.
APSBUF	THE AP STATUS TABLE APC GLOBAL.
APTBUF	AP CHAR TABLE RECORD BUFFER.
BADINI	CANNED UNSUCCESSFUL INIT MSG.
BASYSG	MONITOR SYSGEN DATA.
CANDEF	DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG	CANNED FORMAT FOR MESSAGE.
CATBUF	THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
CHDSTM	PROCESS CHILD STATUS MESSAGE.
CHKSTS	CHECK STATUS.
CLDBUF	CHILD TABLE RECORD BUFFER.
CLNUPH	CLEANUP MESSAGE FORMAT.
CLOSED	LOGIC FOR CLOSING APC QUEUE FILE.
CLQINI	CLEAN INIT QUEUE.
CRTPRD	THE DIRECTORY TABLE FOR CREATE PROCESS.
DELPRD	THE DIRECTORY TABLE FOR DELETE PROCESS.
DLVEVB	EVENT BLOCK DEFINITIONS FOR DELIVERING A MESSAGE.
DLVMBX	AP MAILBOX NAME.
DLVQFD	DELIVER QUEUE FILE DEFINITION.
DLVQFI	DELIVER QUEUE FILE.
DLVQST	DELIVER QUEUE STATUS.
DWTQST	DATA UNIT, QUEUE STATUS.
ERRPRO	PROCESS ERROR INCLUDE FILE.
FILERR	THE NTM QUEUE ERROR FILE.
GDARGS	GUARANTEED DELIVERY ARGS.
GDDATA	GUARANTEED DELIVERY DATA.
HNRTMG	HOST NAME RETURN MSG.
HSTGLE	HOST GLOBAL SECTION END.
IATBUF	I'M ALIVE RECORD BUFFER.

NTM/MPU Include File List

File Name	Purpose
-----	-----
INIDAT	FORMAT FOR INITIAL APC DATA.
INPEVB	MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR THE APC HOT.
LGMSG	FORMAT OF LOGGED MESSAGE.
LOGSEL	STRUCTURE FOR SELECTIVE LOGGING INFORMATION.. KEPT IN GLOBAL.
MBXCHE	MAILBOX CHECK.
MBXNME	APC INPUT MAILBOX NAME FORMAT.
MPRBUF	MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
NTMMSG	LAYOUT OF NTM MESSAGE.
OPENDL	OPEN ON-APC DELIVER QUEUE FILES.
OPIINI	PURPOSE NOT KNOWN.
OPQINI	PURPOSE NOT KNOWN.
POPTAB	INIT TABLES.
PSSAPC	APC NAME VALUES.
QMSG	QUEUE MESSAGE.
RDWTIQ	READ/WRITE TO QUEUE.
REVINI	WAIT-INIT QUEUE FILE.
SACANM	SOURCE ACK MESSAGE.
SDDEF	INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
SDKIDM	SHUTDOWN MESSAGE.
SDMNDT	MPU TO MONITOR ERROR MESSAGE FORMAT.
SDSPDT	MPU TO AP ERROR MESSAGE FORMAT.
SFTSDM	SOFT SHUTDOWN MESSAGE.
SMCANM	CANNED FORMAT FOR MESSAGE SENT OUT IN SNDMON.
SSTEMG	SYSTEM STATE MESSAGE.
STEBV	START UP DEFINITIONS.
SYSERR	SYSTEM ERROR CODE DEFINITIONS.
SYSTAT	SYSTEM STATUS CODE DEFINITIONS.
TABDEF	INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLACT	AUTHORITY CHECK TABLE.
TBLAPC	THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPI	THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

NTM/MPU Include File List

File Name -----	Purpose -----
TELAFT	THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TELAUT	THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TELCAT	FORMAT FOR INITIAL APC DATA.
TELCLOD	THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TELDEF	INPUT FOR TABLE ROUTINES.
TELDIR	THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TELGDD	THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TELMST	THIS IS THE APC STATUS TABLE... A HOST GLOBAL TABLE.
TELIAT	IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TELLOG	LOGON TABLE.
TELLST	THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TELMPR	MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TOMSG	TIMEOUT ERROR MESSAGE.
UNINAK	INITIATION ACK MESSAGE.
WAITDE	DEBUG MSG FILE BUFFER.
WAITON	WAIT ON A MSG.
WRITED	WRITE TO DELIVER MSG QUEUE.
WRTINI	PURPOSE NOT KNOWN.
WRTMSG	SEND A MESSAGE TO MAILBOX.
WTINIQ	WAIT INIT QUEUE ASSIGNMENTS.
WTIQFD	WAIT INIT QUEUE FILE DEFINITIONS.
WTIQST	FILE STATUS DEFINITIONS.
WTHSGE	HANDLE ERRORS WHILE WAITING FOR STARTUP MESSAGES.

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3.10.5 Where Include File Used List

The following lists each include file from 3.10.4 and all the modules documented in this specification which include them. The purpose of each module is listed as well.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
AAMSG	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
ACTBUF	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
APCBUF	DETCOM	DETERMINE CORRECT COMM AP.
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	RMVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.
	RTESND	ROUTE AND SEND A MESSAGE.
	TIMCHK	TIME CHECKER.
APDFLG	ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
	APDEAD	PROCESS AP DYING MESSAGE
	APSTAT	PROCESS AP STATUS MESSAGES.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMMSG	GUARANTEED DELIVERY MESSAGE HANDLER.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICKH	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	MNGMSG	MANAGE MESSAGE.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	MNGPRC	MANAGE PROCESS.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSKOM	PROCESS SYSTEM COMMANDS.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
APIBUF		
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
APOBUF		
	ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
	APDEAD	PROCESS AP DYING MESSAGE
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INITAP	INITIATE THE APPLICATION PROCESS.
	PFINIT	PERFORM AP INITIATION.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	SHTAPC	SHUTDOWN THE AP CLUSTER.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
APSBUF		
	APDEAD	PROCESS AP DYING MESSAGE
	APSTBL	TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INITAP	INITIATE THE APPLICATION PROCESS.
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	TIMCHK	TIME CHECKER.
APTBUF		
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	PFINIT	PERFORM AP INITIATION.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDKAN	SEND CANNED MESSAGE TO AP.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	WRITPR	WRITE PROCESS.
 BADINI		
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	INITAP	INITIATE THE APPLICATION PROCESS.
 BASYSG		
	IISSYS	SUBROUTINE USED TO REPLACE OR MODIFY THE IISS SYSGEN DATA
	MPUGEN	BUILD IISS SYSGEN FILE.
 CANDEF		
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.

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NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----

	IMALIV	PROCESS I'M ALIVE MESSAGE.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SHTAPC	SHUTDOWN THE AP CLUSTER.

CANMSG

	APDEAD	PROCESS AP DYING MESSAGE
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	GDMSG	GUARANTEED DELIVERY MESSAGE HANDLER.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCAN	SEND CANNED MESSAGE TO AP.

CATBUF

	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
--	--------	-------------------------------------------

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
CHDSTM	SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
CHKSTS	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PRINPT	PROCESS CLUSTER INPUT.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SENDAP	HANDLE MESSAGES FOR APs ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SNDCAN	SEND CANNED MESSAGE TO AP.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SNDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
	SNDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	TRMAPC	TERMINATE THE AP CLUSTER.
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
	WRITPR	WRITE PROCESS.
CLDBUF	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	KIDST SDKIDS	CHECK IF ALL CHILD APS ARE DEAD. SEND SHUTDOWN MESSAGES TO CHILD APS.
CLNUPH	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
CLOSED	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
CLQINI	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
CRTPRD	CRTPRC	CREATE PROCESSES (DETACHED) ON THE VAX.
DELPRD	DELPRC	DELETE PROCESSES ON THE VAX.

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WTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
DLVEVB		
	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	LGMSG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SENDCA	SEND CANNED MESSAGE TO AP.
	SENDCL	SEND CLEANUP MESSAGE TO CHILD AP.
	SENDCH	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SENDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
	SENDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	SDNSAP	SEND MESSAGE TO SOURCE AP.
	SDNSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	VIAOVN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
	WRITPR	WRITE PROCESS.
DLVMBX		
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SENDCA	SEND CANNED MESSAGE TO AP.
	SENDCL	SEND CLEANUP MESSAGE TO CHILD AP.
	SENDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	SDNSAP	SEND MESSAGE TO SOURCE AP.
	SDNSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	WRITPR	WRITE PROCESS.

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WTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
DLVQFD	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
DLVQFI	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
DLVQST	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
DWTQST	INITAP	INITIATE THE APPLICATION PROCESS.
ERRPRO	DLVMSG IATTBL SNDMON SNDMTR	DELIVER MESSAGE TO THE AP. TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE. SEND MONITOR A STATUS MESSAGE VIA ITS APC. SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
FILERR		
	APOTBL	TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
	APSTBL	TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
	CLDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
	EXCHPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSGG	GUARANTEED DELIVERY MESSAGE HANDLER.
	GRDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED DELIVERY TABLE.
	IATTBL	TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
	MPRTBL	TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR TABLE.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
GDARGS		
	MNGMSG	MANAGE MESSAGE.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSCOM	PROCESS SYSTEM COMMANDS.
GDDATA		
	GDMSGG	GUARANTEED DELIVERY MESSAGE HANDLER.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
HNRTMG	HSTNRQ	HOST NAME REQUEST PROCESSING.
HSTGLE	MAPHST MPUINI	MAP TO THE HOST TABLES. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
IATBUF	IATCHK IMALIV INITAP	AGE I'M ALIVE TABLE ENTRIES. PROCESS I'M ALIVE MESSAGE. INITIATE THE APPLICATION PROCESS.
INIDAT	ADDPR ALDEAD APDEAD APSTAT CHDPRC CHDSTM CLDCHK CLNUP CMPHDR CNCLSD DELCLD	ADD ENTRY TO MESSAGE PAIR TABLE. CHECK IF ALL APS ON APC ARE DEAD PROCESS AP DYING MESSAGE PROCESS AP STATUS MESSAGES. CHILD TABLE PROCESSING. PROCESS CHILD STATUS MESSAGE. CHECK CHILD TABLE FOR RESERVED ENTRIES. CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE. COMPLETE MESSAGE HEADER. PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC. DELETE CHILD ENTRY FROM CHILD TABLE.

MTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	DETCOM	DETERMINE CORRECT COMM AP.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	FSTART	FINAL START-UP PROCEDURE.
	GDMSGG	GUARANTEED DELIVERY MESSAGE HANDLER.
	GENSER	GENERATE MESSAGE SERIAL NUMBER.
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	INITAP	INITIATE THE APPLICATION PROCESS.
	INITST	INITIAL START-UP PROCEDURE.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	LGMESG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	OUTGDM	OUTPUT GUARANTEED DELIVERY MESSAGE -- STUBBED OUT
	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
	PFINIT	PERFORM AP INITIATION.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRIMPT	PROCESS CLUSTER INPUT.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	RMVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	RMVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCAN	SEND CANNED MESSAGE TO AP.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	SNDCSH	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SNDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
	SNDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	STRAPC	START UP THE AP CLUSTER.
	SYSKOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	TRMAPC	TERMINATE THE AP CLUSTER.
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	VYOFFC	VERIFY MESSAGES FROM OFF THE CLUSTER.
	WRITPR	WRITE PROCESS.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
INPEVB	EXCHPU	EXECUTE MESSAGE PROCESSING UNIT.
	FSTART	FINAL START-UP PROCEDURE.
	INITST	INITIAL START-UP PROCEDURE.
	PRINPT	PROCESS CLUSTER INPUT.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TRMAPC	TERMINATE THE AP CLUSTER.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
LGMSG		
	LGMSG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
LOGSEL		
	ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	INITST	INITIAL START-UP PROCEDURE.
	LGMSG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	MAPHST	MAP TO THE HOST TABLES.
	MNGMSG	MANAGE MESSAGE.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINPT	PROCESS CLUSTER INPUT.
	SNDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TRMAPC	TERMINATE THE AP CLUSTER.
MBXCHE		
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SNDCAN	SEND CANNED MESSAGE TO AP.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	WRITPR	WRITE PROCESS.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
MBXNME		
	FSTART	FINAL START-UP PROCEDURE.
	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	INITST	INITIAL START-UP PROCEDURE.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PRINPT	PROCESS CLUSTER INPUT.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SNDKAN	SEND CANNED MESSAGE TO AP.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SNDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TRMAPC	TERMINATE THE AP CLUSTER.
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
MPRBUF		
	ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
	RMVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
NTMMSG		
	ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	APDEAD	PROCESS AP DYING MESSAGE
	APSTAT	PROCESS AP STATUS MESSAGES.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	AUTMSG	AUTHORITY TABLE CHECK TO SEE IF MESSAGE CAN BE SENT.
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	CMPHDR	COMPLETE MESSAGE HEADER.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	FSTART	FINAL START-UP PROCEDURE.
	GDMSGGS	GUARANTEED DELIVERY MESSAGE HANDLER.
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	INITAP	INITIATE THE APPLICATION PROCESS.
	LGMESG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	RMVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	RMVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SHUTAP	PROCESS SHUTDOWN AP MSG - STUBBED OUT.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	STRAPC	START UP THE AP CLUSTER.
	SUPDEF	SUPPLY SYSTEM DEFAULTS.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	VYOFFC	VERIFY MESSAGES FROM OFF THE CLUSTER.
	WRITPR	WRITE PROCESS.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
OPENDL	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
OPIINI	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
OPQINI	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
POPTAB	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
PSSAPC	IMALIV	PROCESS I'M ALIVE MESSAGE.
QMSG	IMALIV	PROCESS I'M ALIVE MESSAGE.
RDWTIQ	INICKK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
REWINI		

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
SACANM	SENDAP SND SAP WRITPR	HANDLE MESSAGES FOR APS ON CLUSTER. SEND MESSAGE TO SOURCE AP. WRITE PROCESS.
SDDEF	APDEAD APSTAT CHDSTM CNCLSD DELCLD DLVMSG EXCMPU GDMSG IMALIV INICLK INITAP MNGMSG MNGPRC MPUINI OFFCLQ PFINIT PRCONC PRINIT PRINPT RTESND	PROCESS AP DYING MESSAGE PROCESS AP STATUS MESSAGES. PROCESS CHILD STATUS MESSAGE. PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC. DELETE CHILD ENTRY FROM CHILD TABLE. DELIVER MESSAGE TO THE AP. EXECUTE MESSAGE PROCESSING UNIT. GUARANTEED DELIVERY MESSAGE HANDLER. PROCESS I'M ALIVE MESSAGE. CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP. INITIATE THE APPLICATION PROCESS. MANAGE MESSAGE. MANAGE PROCESS. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT. HANDLE MESSAGES FOR OFF CLUSTER. PERFORM AP INITIATION. PROCESS MESSAGES FROM ON THE CLUSTER. PROCESS AP INITIATION MESSAGE. PROCESS CLUSTER INPUT. ROUTE AND SEND A MESSAGE.

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NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSCOM	PROCESS SYSTEM COMMANDS.
	TIMCHK	TIME CHECKER.
	TRMAPC	TERMINATE THE AP CLUSTER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
SDKIDM	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
SDMNDT	ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
	APDEAD	PROCESS AP DYING MESSAGE
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	CMPHDR	COMPLETE MESSAGE HEADER.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DETCOM	DETERMINE CORRECT COMM AP.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	FSTART	FINAL START-UP PROCEDURE.
	GDMSGG	GUARANTEED DELIVERY MESSAGE HANDLER.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
	INITAP	INITIATE THE APPLICATION PROCESS.
	INITST	INITIAL START-UP PROCEDURE.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	LGMESG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
	PFINIT	PERFORM AP INITIATION.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	RMVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.
	RMVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCAN	SEND CANNED MESSAGE TO AP.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	SNDCSM	SEND CHILD STATUS MESSAGE TO PARENT AP.
	SNDMON	SEND MONITOR A STATUS MESSAGE VIA ITS APC.
	SNDMTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
	SNDSAP	SEND MESSAGE TO SOURCE AP.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	SHDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TRMAPC	TERMINATE THE AP CLUSTER.
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	VYOFFC	VERIFY MESSAGES FROM OFF THE CLUSTER.
	WRITPR	WRITE PROCESS.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
SDSPDT	ALOPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	CHDPRC	CHILD TABLE PROCESSING.
	CHPHDR	COMPLETE MESSAGE HEADER.
	INALIV	PROCESS I'M ALIVE MESSAGE.
	LGMSGC	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PROONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SDSAP	SEND MESSAGE TO SOURCE AP.
	SHDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	WRITPR	WRITE PROCESS.
SFTSDM	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.

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NTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
SNCANN	SNDMON SNDMTR	SEND MONITOR A STATUS MESSAGE VIA ITS APC. SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SSTEMG	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
STEVE	FSTART INITST PRINPT TABPRC TRMAPC	FINAL START-UP PROCEDURE. INITIAL START-UP PROCEDURE. PROCESS CLUSTER INPUT. PROCESS TABLE STATUS MESSAGE FROM MONITOR. TERMINATE THE AP CLUSTER.
SYSERR	ACTINI ACTTBL ADDPR ALDEAD APCTBL APDEAD APIINI APITBL APOINI APOTEL	LOAD THE AUTHORITY CHECK TABLE FROM THE AUTHORITY CHECK FILE. TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE ADD ENTRY TO MESSAGE PAIR TABLE. CHECK IF ALL APS ON APC ARE DEAD TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER STATUS TABLE. PROCESS AP DYING MESSAGE INITIALIZE THE AP INFORMATION TABLE. TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING TABLE INITIALIZE AP OPERATING TABLE. TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
APSINI		INITIALIZE THE AP STATUS TABLE.
APSTBL		TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
APTINI		INITIALIZE THE AP CHARACTERISTICS TABLE.
APTTBL		TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
AUTTBL		TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE.
CATTBL		TABLE MANAGEMENT FUNCTIONS FOR THE MESSAGE CATEGORY TABLE.
CHDPRC		CHILD TABLE PROCESSING.
CHDSTM		PROCESS CHILD STATUS MESSAGE.
CLDCHK		CHECK CHILD TABLE FOR RESERVED ENTRIES.
CLDINI		INITIALIZE CHILD TABLE.
CLDTBL		TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
CMPHDR		COMPLETE MESSAGE HEADER.
DETCOM		DETERMINE CORRECT COMM AP.
DIRTBL		TABLE MANAGEMENT FUNCTIONS FOR THE DIRECTORY TABLE.
DLVMSG		DELIVER MESSAGE TO THE AP.
EXCMFU		EXECUTE MESSAGE PROCESSING UNIT.
FSTART		FINAL START-UP PROCEDURE.
GDMMSG		GUARANTEED DELIVERY MESSAGE HANDLER.
GRDTBL		TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED DELIVERY TABLE.
HSTNRQ		HOST NAME REQUEST PROCESSING.
HSTTBL		TABLE MANAGEMENT FUNCTIONS FOR THE HOST STATUS TABLE
IATCHK		AGE I'M ALIVE TABLE ENTRIES.
IATINI		INITIALIZE THE I'M ALIVE TABLE.
IATTBL		TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
IMALIV		PROCESS I'M ALIVE MESSAGE.
INICHK		CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
INITAK		BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
INITAP		INITIATE THE APPLICATION PROCESS.
INITST		INITIAL START-UP PROCEDURE.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
KIDST		CHECK IF ALL CHILD APS ARE DEAD.
LGMESG		SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
LSTTBL		TABLE MANAGEMENT FUNCTIONS FOR THE LINK STATUS TABLE.
MPRINI		INITILIAZE THE MESSAGE PAIR TABLE.
MPRTBL		TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR TABLE.
MPUINF		SUPPLY MPU INFORMATION TO MESSAGE HEADER.
MPUINI		MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
OFFCLQ		HANDLE MESSAGES FOR OFF CLUSTER.
PAIRCK		CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
PFINIT		PERFORM AP INITIATION.
PRCONC		PROCESS MESSAGES FROM ON THE CLUSTER.
PRINIT		PROCESS AP INITIATION MESSAGE.
PRINPT		PROCESS CLUSTER INPUT.
QWTINI		WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
RTESND		ROUTE AND SEND A MESSAGE.
SDKIDS		SEND SHUTDOWN MESSAGES TO CHILD APS.
SENDAP		HANDLE MESSAGES FOR APS ON CLUSTER.
SFTSD		SEND SOFT SHUT DOWN MESSAGE TO AP.
SHTAPC		SHUTDOWN THE AP CLUSTER.
SNDKAN		SEND CANNED MESSAGE TO AP.
SNDCLN		SEND CLEANUP MESSAGE TO CHILD AP.
SNDCSM		SEND CHILD STATUS MESSAGE TO PARENT AP.
SNDMON		SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDMTR		SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SNDSAP		SEND MESSAGE TO SOURCE AP.
SNDSTE		SEND SYSTEM STATE MESSAGE TO ALIVE AP.
STRAPC		START UP THE AP CLUSTER.
TABPRC		PROCESS TABLE STATUS MESSAGE FROM MONITOR.
TRMAPC		TERMINATE THE AP CLUSTER.
VIAOWN		SEND MESSAGE VIA OWN APC INPUT MAILBOX.
VMSGCT		VERIFY MESSAGE CATEGORY.
VYOFFC		VERIFY MESSAGES FROM OFF THE CLUSTER.
WRITPR		WRITE PROCESS.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
SYSTAT	IMALIV SNDSTE	PROCESS I'M ALIVE MESSAGE. SEND SYSTEM STATE MESSAGE TO ALIVE AP.
TABDEF	ADDPR ALDEAD APDEAD CHDPRC CHDSTM CLDCHK CLNUP CNCLSD DELCLD DETCOM DLVMSG HSTNRQ IATCHK IMALIV INITAP KIDST LISTPR MPUINF OFFCLQ PAIRCK PFINIT POSAUT	ADD ENTRY TO MESSAGE PAIR TABLE. CHECK IF ALL APS ON APC ARE DEAD PROCESS AP DYING MESSAGE CHILD TABLE PROCESSING. PROCESS CHILD STATUS MESSAGE. CHECK CHILD TABLE FOR RESERVED ENTRIES. CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE. PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC. DELETE CHILD ENTRY FROM CHILD TABLE. DETERMINE CORRECT COMM AP. DELIVER MESSAGE TO THE AP. HOST NAME REQUEST PROCESSING. AGE I'M ALIVE TABLE ENTRIES. PROCESS I'M ALIVE MESSAGE. INITIATE THE APPLICATION PROCESS. CHECK IF ALL CHILD APS ARE DEAD. SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP. SUPPLY MPU INFORMATION TO MESSAGE HEADER. HANDLE MESSAGES FOR OFF CLUSTER. CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES. PERFORM AP INITIATION. CHECK IF AUTH RESTRICTION ON THE DEST AP.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	PROCMC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	RHVAS	REMOVE ASTERIKS FROM MESSAGE HEADER.
	RHVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCA	SEND CANNED MESSAGE TO AP.
	SNDAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	WRITPR	WRITE PROCESS.
TBLACT	ACTINI	LOAD THE AUTHORITY CHECK TABLE FROM THE AUTHORITY CHECK FILE.
	ACTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE
	EXCMPT	EXECUTE MESSAGE PROCESSING UNIT.
	MNGMSG	MANAGE MESSAGE.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PROCMC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINPT	PROCESS CLUSTER INPUT.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.

TBLAPC

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WTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	APCTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER STATUS TABLE.
	APDEAD	PROCESS AP DYING MESSAGE
	APSTAT	PROCESS AP STATUS MESSAGES.
	CHDSTH	PROCESS CHILD STATUS MESSAGE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DETCOM	DETERMINE CORRECT COMM AP.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMFU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSGG	GUARANTEED DELIVERY MESSAGE HANDLER.
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	MAPHST	MAP TO THE HOST TABLES.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RHVAST	REMOVE ASTERIKS FROM MESSAGE HEADER.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
TBLAPI		
	APDEAD	PROCESS AP DYING MESSAGE
	APIINI	INITIALIZE THE AP INFORMATION TABLE.
	APITBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING TABLE
	APSTAT	PROCESS AP STATUS MESSAGES.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CMPHDR	COMPLETE MESSAGE HEADER.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPT	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSG	GUARANTEED DELIVERY MESSAGE HANDLER.
	HSTNRQ	HOST NAME REQUEST PROCESSING.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
TBLAPO		
	ALDEAD	CHECK IF ALL APS ON APC ARE DEAD
	APDEAD	PROCESS AP DYING MESSAGE
	APOINI	INITIALIZE AP OPERATING TABLE.
	APOTBL	TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
	APSTAT	PROCESS AP STATUS MESSAGES.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSGGS	GUARANTEED DELIVERY MESSAGE HANDLER.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESEND	ROUTE AND SEND A MESSAGE.
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.

NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	TIMCHK WTINIT	TIME CHECKER. CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
TBLAPS		
	APDEAD APSINI APSTAT APSTBL	PROCESS AP DYING MESSAGE INITIALIZE THE AP STATUS TABLE. PROCESS AP STATUS MESSAGES. TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
	CHDPRC CHDSTM CLDCHK CLNUP	CHILD TABLE PROCESSING. PROCESS CHILD STATUS MESSAGE. CHECK CHILD TABLE FOR RESERVED ENTRIES. CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	CMPHDR CNCLSD	COMPLETE MESSAGE HEADER. PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD DLVMSG EXCMPU GDMSGG IATCHK IMALIV INICLK	DELETE CHILD ENTRY FROM CHILD TABLE. DELIVER MESSAGE TO THE AP. EXECUTE MESSAGE PROCESSING UNIT. GUARANTEED DELIVERY MESSAGE HANDLER. AGE I'M ALIVE TABLE ENTRIES. PROCESS I'M ALIVE MESSAGE. CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP LISTPR	INITIATE THE APPLICATION PROCESS. SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MNGMSG MNGPRC MPUINF MPUINI	MANAGE MESSAGE. MANAGE PROCESS. SUPPLY MPU INFORMATION TO MESSAGE HEADER. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ PFINIT PRCONC	HANDLE MESSAGES FOR OFF CLUSTER. PERFORM AP INITIATION. PROCESS MESSAGES FROM ON THE CLUSTER.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDMODE	SHUTDOWN MODE PROCESSING.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCLN	SEND CLEANUP MESSAGE TO CHILD AP.
	STRAPC	START UP THE AP CLUSTER.
	SYSKOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
TBLAPT	ADDPR	ADD ENTRY TO MESSAGE PAIR TABLE.
	APDEAD	PROCESS AP DYING MESSAGE
	APSTAT	PROCESS AP STATUS MESSAGES.
	APTINI	INITIALIZE THE AP CHARACTERISTICS TABLE.
	APTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
	CHDPRC	CHILD TABLE PROCESSING.
	CHDSTM	PROCESS CHILD STATUS MESSAGE.
	CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.
	CLNUP	CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
	CMPHDR	COMPLETE MESSAGE HEADER.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSG	GUARANTEED DELIVERY MESSAGE HANDLER.
	IATCHK	AGE I'M ALIVE TABLE ENTRIES.
	IMALIV	PROCESS I'M ALIVE MESSAGE.

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	SNDCAN	SEND CANNED MESSAGE TO AP.
	SNDSAP	SEND MESSAGE TO SOURCE AP.
	SNDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	TRMAPC	TERMINATE THE AP CLUSTER.
	VMSGCT	VERIFY MESSAGE CATEGORY.
	WRITPR	WRITE PROCESS.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

TBLAUT

NTM/MPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	AUTMSG	AUTHORITY TABLE CHECK TO SEE IF MESSAGE CAN BE SENT.
	AUTTBL	TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	MNGMSG	MANAGE MESSAGE.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	POSAUT	CHECK IF AUTH RESTRICTION ON THE DEST AP.
	PROCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINPT	PROCESS CLUSTER INPUT.
	STRAPC	START UP THE AP CLUSTER.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.

TBLCAT

CATTBL	TABLE MANAGEMENT FUNCTIONS FOR THE MESSAGE CATEGORY TABLE.
CMPHDR	COMPLETE MESSAGE HEADER.
EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
MAPHST	MAP TO THE HOST TABLES.
MNGMSG	MANAGE MESSAGE.
MPUINF	SUPPLY MPU INFORMATION TO MESSAGE HEADER.
MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
PROCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
PRINPT	PROCESS CLUSTER INPUT.
VMSGCT	VERIFY MESSAGE CATEGORY.

TBLCLD

APDEAD	PROCESS AP DYING MESSAGE
APSTAT	PROCESS AP STATUS MESSAGES.
CHDPRC	CHILD TABLE PROCESSING.
CHDSTH	PROCESS CHILD STATUS MESSAGE.
CLDCHK	CHECK CHILD TABLE FOR RESERVED ENTRIES.

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MTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	CLDINI	INITIALIZE CHILD TABLE.
	CLDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCMPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSG	GUARANTEED DELIVERY MESSAGE HANDLER.
	IMALIV	PROCESS I'M ALIVE MESSAGE.
	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	KIDST	CHECK IF ALL CHILD APS ARE DEAD.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PFINIT	PERFORM AP INITIATION.
	PRCONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDKIDS	SEND SHUTDOWN MESSAGES TO CHILD APS.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	SHTAPC	SHUTDOWN THE AP CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSCOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

TBLDEF

IATCHK AGE I'M ALIVE TABLE ENTRIES.

HTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	LISTPR	SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
	SHUTAPC	SHUTDOWN THE AP CLUSTER.

TELDIR

APDEAD	PROCESS AP DYING MESSAGE
APSTAT	PROCESS AP STATUS MESSAGES
CHDSTH	PROCESS CHILD STATUS MESSAGE
CHCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
CHTPRC	CREATE PROCESSES (DETACHED) ON THE VAX
DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
DIRTEL	TABLE MANAGEMENT FUNCTIONS FOR THE DIRECTORY TABLE.
DLVMSG	DELIVER MESSAGE TO THE AP
EXCNPV	EXECUTE MESSAGE PROCESSING UNIT
GUARMSG	GUARANTEED DELIVERY MESSAGE HANDLER
INALIV	PROCESS I'M ALIVE MESSAGE
INICKE	CHECK WAIT-FOR-INITILISATION QUEUE FOR MESSAGE FOR A GIVEN AP
INITAP	INITIATE THE APPLICATION PROCESS
MAPNET	MAP TO THE HOST TABLES.
MDMSGC	MANAGE MESSAGE
MDGPRC	MANAGE PROCESS
MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER
PFINIT	PERFORM AP INITIATION
PROCMC	PROCESS MESSAGES FROM ON THE CLUSTER
PRINIT	PROCESS AP INITIATION MESSAGE
PRINPT	PROCESS CLUSTER INPUT
RTESND	ROUTE AND SEND A MESSAGE
SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC
SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER
STRAPC	START UP THE AP CLUSTER

NTM/NPU Where-include-file-used List

Include File	Module Name	Module Purpose
-----	-----	-----
	SYSCOM	PROCESS SYSTEM COMMANDS
	TINCHK	TIME CHECKER
	VTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP
TELOD	APDEAD	PROCESS AP DYING MESSAGE
	APSTAT	PROCESS AP STATUS MESSAGES
	CHDSTN	PROCESS CHILD STATUS MESSAGE
	CICLED	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE
	DLVMSG	DELIVER MESSAGE TO THE AP
	EXCNPU	EXECUTE MESSAGE PROCESSING UNIT
	GUINSG	GUARANTEED DELIVERY MESSAGE HANDLER
	GRDTBL	TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED DELIVERY TABLE
	INALIV	PROCESS I N ALIVE MESSAGE
	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP
	INITAP	INITIATE THE APPLICATION PROCESS
	MSGMSG	MANAGE MESSAGE
	MSGPRC	MANAGE PROCESS
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER
	PFINIT	PERFORM AP INITIATION
	PROCMC	PROCESS MESSAGES FROM ON THE CLUSTER
	PRINIT	PROCESS AP INITIATION MESSAGE
	PRINPT	PROCESS CLUSTER INPUT
	RTESND	ROUTE AND SEND A MESSAGE
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER
	STRAPC	START UP THE AP CLUSTER
	SYSCOM	PROCESS SYSTEM COMMANDS
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR
	TINCHK	TIME CHECKER

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NTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
TELMST	EXCMNU HSTTBL	EXECUTE MESSAGE PROCESSING UNIT. TABLE MANAGEMENT FUNCTIONS FOR THE HOST STATUS TABLE
	MAPHST MPUINI	MAP TO THE HOST TABLES. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
TELIAT	APDEAD APSTAT CHDSTM CMCLSD	PROCESS AP DYING MESSAGE PROCESS AP STATUS MESSAGES. PROCESS CHILD STATUS MESSAGE. PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD DLVMSG EXCMNU GDMSGG IATCHK IATINI IATTBL	DELETE CHILD ENTRY FROM CHILD TABLE. DELIVER MESSAGE TO THE AP. EXECUTE MESSAGE PROCESSING UNIT. GUARANTEED DELIVERY MESSAGE HANDLER. AGE I'M ALIVE TABLE ENTRIES. INITIALIZE THE I'M ALIVE TABLE. TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
	IMALIV INICHK	PROCESS I'M ALIVE MESSAGE. CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP NMMSGG NMGPRC MPUINI	INITIATE THE APPLICATION PROCESS. MANAGE MESSAGE. MANAGE PROCESS. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.

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NTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	PFINIT	PERFORM AP INITIATION.
	PROONC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TINCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
 TBLLOG	 EXCMPT MAPHST MPUINI	 EXECUTE MESSAGE PROCESSING UNIT. MAP TO THE HOST TABLES. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
 TBLST	 EXCMPT LSTTBL MAPHST MPUINI	 EXECUTE MESSAGE PROCESSING UNIT. TABLE MANAGEMENT FUNCTIONS FOR THE LINK STATUS TABLE. MAP TO THE HOST TABLES. MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
 TBLMPR	 ADDPR APDEAD	 ADD ENTRY TO MESSAGE PAIR TABLE. PROCESS AP DYING MESSAGE

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MTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	APSTAT	PROCESS AP STATUS MESSAGES.
	CHDSTN	PROCESS CHILD STATUS MESSAGE.
	CNCLSD	PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
	DELCLD	DELETE CHILD ENTRY FROM CHILD TABLE.
	DLVMSG	DELIVER MESSAGE TO THE AP.
	EXCHPU	EXECUTE MESSAGE PROCESSING UNIT.
	GDMSGS	GUARANTEED DELIVERY MESSAGE HANDLER.
	INALIV	PROCESS I'M ALIVE MESSAGE.
	INICLK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	INITAP	INITIATE THE APPLICATION PROCESS.
	MNGMSG	MANAGE MESSAGE.
	MNGPRC	MANAGE PROCESS.
	NPRINI	INITILIAZE THE MESSAGE PAIR TABLE.
	NPRTEL	TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR TABLE.
	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER.
	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
	PFINIT	PERFORM AP INITIATION.
	PROCMC	PROCESS MESSAGES FROM ON THE CLUSTER.
	PRINIT	PROCESS AP INITIATION MESSAGE.
	PRINPT	PROCESS CLUSTER INPUT.
	RHVPR	SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
	RTESND	ROUTE AND SEND A MESSAGE.
	SDPEND	PROCESS SHUT DOWN PENDING MSG ON UI APC.
	SENDAP	HANDLE MESSAGES FOR APS ON CLUSTER.
	STRAPC	START UP THE AP CLUSTER.
	SYSOM	PROCESS SYSTEM COMMANDS.
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR.
	TIMCHK	TIME CHECKER.
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

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WTM/NPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
TOMSG	PAIRCK	CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
UNINAK	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
WAITDE	FSTART TABPRC	FINAL START-UP PROCEDURE. PROCESS TABLE STATUS MESSAGE FROM MONITOR.
WAITON	FSTART TABPRC	FINAL START-UP PROCEDURE. PROCESS TABLE STATUS MESSAGE FROM MONITOR.
WRITED	DLVQUE	QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
WRTINI		

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
VRTMSG	OFFCLQ WRITPR	HANDLE MESSAGES FOR OFF CLUSTER. WRITE PROCESS.
WTINIQ	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
WTIQFD	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
WTIQST	INICHK	CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	QWTINI	WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE

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NTM/MPU Where-include-file-used List

Include File -----	Module Name -----	Module Purpose -----
	WTINIT	CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
WTMSG	FSTART	FINAL START-UP PROCEDURE.

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3.10.6 Where External Routine Used List

The following lists each external function or routine listed in 3.10.3 and all the documented modules which call it. The purpose of each module is listed as well.

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NTM/MPU Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
ASCTIM	GDMSG LGMSG	GUARANTEED DELIVERY MESSAGE HANDLER. SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
CNLTIM	FSTART PRINPT TABPRC	FINAL START-UP PROCEDURE. PROCESS CLUSTER INPUT. PROCESS TABLE STATUS MESSAGE FROM MONITOR.
CRTMBX	INITST	INITIAL START-UP PROCEDURE.
DELMBX	TRMAPC	TERMINATE THE AP CLUSTER.
ENDRUN	MPUINI	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
ERRPRO	DLVMSG IATTBL SNDMON SNDMTR	DELIVER MESSAGE TO THE AP. TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE. SEND MONITOR A STATUS MESSAGE VIA ITS APC. SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.

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NTM/MPU Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
GETMSG	FSTART PRINPT TABPRC	FINAL START-UP PROCEDURE. PROCESS CLUSTER INPUT. PROCESS TABLE STATUS MESSAGE FROM MONITOR.
GETTIM	ADDPR PAIRCK	ADD ENTRY TO MESSAGE PAIR TABLE. CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
IISYS	MPUGEN	BUILD IISS SYSGEN FILE.
ITHADR	MAPHST	MAP TO THE HOST TABLES.
MTRGEN	MPUGEN	BUILD IISS SYSGEN FILE.
RCVMSG	FSTART PRINPT TABPRC	FINAL START-UP PROCEDURE. PROCESS CLUSTER INPUT. PROCESS TABLE STATUS MESSAGE FROM MONITOR
RELEV	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.

NTM/KPU Where-external-routine-used List

System Module	Module Name	Module Purpose
-----	-----	-----
	LGMSG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP
	SHDCAN	SEND CANNED MESSAGE TO AP
	SHDCLN	SEND CLEANUP MESSAGE TO CHILD AP
	SHDCSN	SEND CHILD STATUS MESSAGE TO PARENT AP
	SHDNON	SEND MONITOR A STATUS MESSAGE VIA ITS APC
	SHDNTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING
	SHDSAP	SEND MESSAGE TO SOURCE AP
	SHDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX
	WRITPR	WRITE PROCESS
SETTIM	FSTART	FINAL START-UP PROCEDURE
	PRINPT	PROCESS CLUSTER INPUT
	TABPRC	PROCESS TABLE STATUS MESSAGE FROM MONITOR
SHDMSG	INITAK	BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE
	LGMSG	SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION
	OFFCLQ	HANDLE MESSAGES FOR OFF CLUSTER
	SFTSD	SEND SOFT SHUT DOWN MESSAGE TO AP
	SHDCAN	SEND CANNED MESSAGE TO AP
	SHDCLN	SEND CLEANUP MESSAGE TO CHILD AP
	SHDCSN	SEND CHILD STATUS MESSAGE TO PARENT AP
	SHDNON	SEND MONITOR A STATUS MESSAGE VIA ITS APC
	SHDNTR	SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING
	SHDSAP	SEND MESSAGE TO SOURCE AP
	SHDSTE	SEND SYSTEM STATE MESSAGE TO ALIVE AP
	VIAOWN	SEND MESSAGE VIA OWN APC INPUT MAILBOX

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NTM/MPU Where-external-routine-used List

System Module -----	Module Name -----	Module Purpose -----
	WRITPR	WRITE PROCESS.
SYSSCREPRC	CRTPRC	CREATE PROCESSES (DETACHED) ON THE VAX.
SYSSDELPRC	DELPRC	DELETE PROCESSES ON THE VAX.
SYSSGETJPI	GETNAM	VAX PROCEDURE TO GET AP'S OS PROCESS NAME.
SYSSMGBLSC	MAPHST	MAP TO THE HOST TABLES.
SYSTRNLOG	CRTPRC	CREATE PROCESSES (DETACHED) ON THE VAX.
WAIT02	FSTART TABPRC	FINAL START-UP PROCEDURE. PROCESS TABLE STATUS MESSAGE FROM MONITOR.
WAIT03	PRINPT	PROCESS CLUSTER INPUT.

3.10.7 Main Program Parts List

The following lists each Main Program listed in 3.10.1 and all the modules which are called either by that module itself or by any of the documented modules which it calls. It is possible for a non-main module to be listed more than once if it is called by multiple modules. The called modules, in this case known as program parts, are marked as to whether they are documented here. If so, the phrase "well-defined module" appears by the module name, if not it is an "external routine". The Purpose of the Main Program module is listed as well.

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NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
AUTTEL		Purpose---, TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY CHECK TABLE. Well-defined module
	RANDIN	

NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
INICBK		Purpose---, CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
	ABORT	Well-defined module
	ALDEAD	Well-defined module
	APCTBL	Well-defined module
	APDEAD	Well-defined module
	APITBL	Well-defined module
	APOTBL	Well-defined module
	APSTAT	Well-defined module
	APSTBL	Well-defined module
	APTTBL	Well-defined module
	ASCTIM	External routine
	CHDPRC	Well-defined module
	CHDSTM	Well-defined module
	CLDTBL	Well-defined module
	CLNHSD	Well-defined module
	CLNUP	Well-defined module
	CNCLSD	Well-defined module
	CRTPRC	Well-defined module
	DELCLD	Well-defined module
	DELPRC	Well-defined module
	DETCOM	Well-defined module
	DIRTBL	Well-defined module
	DLVMSG	Well-defined module
	DLVQUE	Well-defined module
	ERRPRO	External routine
	GDMSGs	Well-defined module
	GENSER	Well-defined module
	GRDTBL	Well-defined module
	HSTNRQ	Well-defined module
	IATTBL	Well-defined module
	IMALIV	Well-defined module
	INITAK	Well-defined module
	INITAP	Well-defined module
	KIDST	Well-defined module
	LISTPR	Well-defined module
	MNGPRC	Well-defined module
	MPRTBL	Well-defined module
	PFINIT	Well-defined module

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NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
	PRINIT	Well-defined module
	QWTINI	Well-defined module
	RANDIN	Well-defined module
	RELEVB	External routine
	RHVPR	Well-defined module
	SDKIDS	Well-defined module
	SDPEND	Well-defined module
	SENDAP	Well-defined module
	SFTSD	Well-defined module
	SHTAPC	Well-defined module
	SHUTAP	Well-defined module
	SNDGAN	Well-defined module
	SNDCLN	Well-defined module
	SNDCSH	Well-defined module
	SNDMON	Well-defined module
	SNDMSG	External routine
	SNDSAP	Well-defined module
	SNDSTE	Well-defined module
	SYSSCREPRC	External routine
	SYSSDELPRC	External routine
	SYSTRNLOG	External routine
	SYSOM	Well-defined module
	VIAOWN	Well-defined module
	WRITPR	Well-defined module
	WTINIT	Well-defined module

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NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
MPUGEN		Purpose--> BUILD IISS SYSGEN FILE
	IISSYS	External routine
	MTRGEN	External routine

NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
MPUINI	Purpose-->	MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
	ABORT	Well-defined module
	ACTINI	Well-defined module
	ACTTEL	Well-defined module
	ADDFR	Well-defined module
	ALDEAD	Well-defined module
	APCTEL	Well-defined module
	APDEAD	Well-defined module
	APIINI	Well-defined module
	APITEL	Well-defined module
	APOINI	Well-defined module
	APOTEL	Well-defined module
	APSINI	Well-defined module
	APSTAT	Well-defined module
	APSTEL	Well-defined module
	APTINI	Well-defined module
	APTTTEL	Well-defined module
	ASCTIM	External routine
	AUTMSG	Well-defined module
	CATTTEL	Well-defined module
	CDMFIL	Well-defined module
	CHDPRC	Well-defined module
	CHDSTM	Well-defined module
	CLDCHK	Well-defined module
	CLDINI	Well-defined module
	CLDTTEL	Well-defined module
	CLNHSD	Well-defined module
	CLNUP	Well-defined module
	CHPHDR	Well-defined module
	CNCLSD	Well-defined module
	CNLTIM	External routine
	CRTMBX	External routine
	CRTPRC	Well-defined module
	DELCLD	Well-defined module
	DELMBX	External routine
	DELPRC	Well-defined module
	DETOON	Well-defined module
	DITTEL	Well-defined module
	DLVMSG	Well-defined module

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NTH/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
	DLVQUE	Well-defined module
	ENDRUN	External routine
	ERRPRO	External routine
	EXCHPU	Well-defined module
	FSTART	Well-defined module
	GDMSGG	Well-defined module
	GENSER	Well-defined module
	GETMSG	External routine
	GETNAM	Well-defined module
	GETTIM	External routine
	GRDTBL	Well-defined module
	HSTWRQ	Well-defined module
	IATCHK	Well-defined module
	IATINI	Well-defined module
	IATTEL	Well-defined module
	IMALIV	Well-defined module
	INITAK	Well-defined module
	INITAP	Well-defined module
	INITST	Well-defined module
	ITHADR	External routine
	KIDST	Well-defined module
	LQMSGG	Well-defined module
	LISTPR	Well-defined module
	MAPHST	Well-defined module
	MNGMSG	Well-defined module
	MNGPRC	Well-defined module
	MPRINI	Well-defined module
	MPRTBL	Well-defined module
	MPUINF	Well-defined module
	OFFCLQ	Well-defined module
	PADZER	Well-defined module
	PAIRCK	Well-defined module
	PFINIT	Well-defined module
	POBAUT	Well-defined module
	PROCONC	Well-defined module
	PRINIT	Well-defined module
	PRINPT	Well-defined module
	QUTINI	Well-defined module
	RANDIN	Well-defined module
	RCVMSG	External routine

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NTM/MPU Main Program Parts List

Main Pgm Name -----	Module Name -----	Module Type -----
	RELEVB	External routine
	RHVAST	Well-defined module
	RHVPR	Well-defined module
	RTESND	Well-defined module
	SAVEQS	Well-defined module
	SDKIDS	Well-defined module
	SDMODE	Well-defined module
	SDPEND	Well-defined module
	SENDAP	Well-defined module
	SETTIM	External routine
	SFTSD	Well-defined module
	SHTAPC	Well-defined module
	SHUTAP	Well-defined module
	SNDCAN	Well-defined module
	SNDCLN	Well-defined module
	SNDCSH	Well-defined module
	SNDMON	Well-defined module
	SNDMSG	External routine
	SNDMTR	Well-defined module
	SNDSAP	Well-defined module
	SNDSTE	Well-defined module
	STRAPC	Well-defined module
	SUPDEF	Well-defined module
	SYSSCREPRC	External routine
	SYSSDELPRC	External routine
	SYSSGETJPI	External routine
	SYSSNGBLSC	External routine
	SYSTRNLOG	External routine
	SYSOON	Well-defined module
	TABPRC	Well-defined module
	TINCHK	Well-defined module
	TRMAPC	Well-defined module
	VIAOWN	Well-defined module
	VNSGCT	Well-defined module
	VYOFFC	Well-defined module
	WAIT02	External routine
	WAIT03	External routine
	WRITPR	Well-defined module
	VTINIT	Well-defined module

3.10.8 Module Documentation

The following documentation describes information which is specific to each individual module being documented in this specification as listed in section 3.10.2. It provides a compact way of getting information that would be otherwise buried within each module's source code.

The specific items in this module documentation have the following meanings:

NAME:	Name of program Module.
PURPOSE:	Purpose of Module as detailed in the source code.
LANGUAGE:	Programming language source code is written in. The choices are: VAX-11 FORTRAN C (I/S-1 Workbench 'C') VAX-11 COBOL
MODULE TYPE:	Whether a Program, Subroutine, or Function.
SOURCE FILE:	Name of Source File from file specification.
SOURCE FILE TYPE:	Source File Extension from file specification.
HOST:	Whether this is a host-dependent routine (VAX or IBM) or blank if host-independent.
SUBSYSTEM:	IISS sub-system this file resides in.
SUBDIRECTORY:	Sub-directory of that subsystem in which this file resides.
DOCUMENTATION GROUP:	Name of documentation group of which this source file is a member.
DESCRIPTION:	A description of the module as obtained

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from the source code.

ARGUMENTS: The arguments with which this routine is called if it is a Subroutine or a Function.

INCLUDE FILES: A list of all the files that are included into this module as well as their purposes.

ROUTINES CALLED: Subroutines or Functions, either documented or external, called by this module, if any.

CALLED DIRECTLY BY: The documented routines which call this module, if any.

USED IN MAIN PROGRAM(S): The documented Main Programs which contain this module in their parts list according to the list in section 3.10.7.

The Module Documentation is arranged alphabetically according to Module Name.

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NTM/MPU Module Documentation

NAME: ABORT
PURPOSE: PROCESS MESSAGE TYPE AB - ABORT
APPLICATION
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ABORT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

MSGBUF -

CALLED DIRECTLY BY:

SYSOON - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICMK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT

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NTM/NPU Module Documentation

NAME: ACTINI
PURPOSE: LOAD THE AUTHORITY CHECK TABLE FROM THE
AUTHORITY CHECK FIL
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ACTINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: NPU
DOCUMENTATION GROUP: NTMNPUP

DESCRIPTION:

ARGUMENTS:

AUTH-CHECK-TABLE - RECRD
RET-CODE - DSPLY [X(5)]

INCLUDE FILES:

SYSEERR - SYSTEM ERROR CODE DEFINITIONS
TEFACT - AUTHORITY CHECK TABLE

CALLED DIRECTLY BY

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR

USED IN MAIN PROGRAM(S)

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT

NTM/MPU Module Documentation

NAME: ACTTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE
AUTHORITY CHECK TABLE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ACTTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

AUTH-CHECK-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLACT - AUTHORITY CHECK TABLE.

ROUTINES CALLED:

RANDIN - PROVIDE A RANDOM NUMBER FOR THE NTM TABLE
ROUTINES.

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CALLED DIRECTLY BY:

POSAUT - CHECK IF AUTH RESTRICTION ON THE DEST AP.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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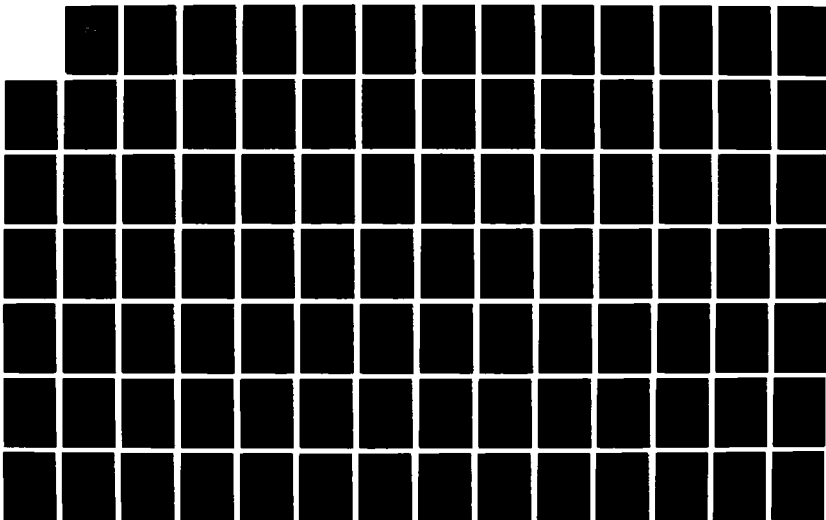
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NTM/MPU Module Documentation

NAME: ADDPR
PURPOSE: ADD ENTRY TO MESSAGE PAIR TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ADDPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CALCULATE TIMEOUT AND INSERT AN ENTRY TO
PAIR TABLE IN ASCENDING TIMEOUT ORDER. PAIR ENTRY
CONSISTS OF TIMEOUT TIME, CHAN ID AND ORIG SOURCE.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
MPRBUF - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

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GETTIM	
PADZER	- CONVERT BINARY FIELD TO A CHARACTER FIELD AND PAD WITH ZEROS.
MPRTBL	- TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR TABLE.
SNDSAP	- SEND MESSAGE TO SOURCE AP.
SNDMTR	- SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

PRCONC	- PROCESS MESSAGES FROM ON THE CLUSTER.
--------	-----------------------------------------

USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
--------	----------------------------------------------------------

NTM/MPU Module Documentation

NAME: ALDEAD
PURPOSE: CHECK IF ALL APS ON APC ARE DEAD
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: ALDEAD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

- CHECK AP OPERATING INFO TABLE TO SEE IF
APS ON THE APC ARE DEAD. THIS IS DONE BY CHECKING
THE NUMBER OF INSTANCES OF EACH AP IN THE TABLE.

ARGUMENTS:

AP-OP-INFO-TABLE = RECRD
AP-DEAD-FLG =
IDATA = RECRD
LNK-SEARCH-START-FLG = DSPLY [X(01)]

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
APOBUF - AP OPERATING INFO RECORD.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.
INIDAT - FORMAT FOR INITIAL APC DATA.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.

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ROUTINES CALLED:

APOTEL - TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING
TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE
SDMODE - SHUTDOWN MODE PROCESSING.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: APCLOG
PURPOSE: NOTIFY ACTLOG.DAT THAT AN APC HAS STARTED.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: APCLOG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

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NTM/MPU Module Documentation

NAME: APCTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE AP
CLUSTER STATUS TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APCTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-CLUSTER-STATUS-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.

CALLED DIRECTLY BY:

DETCOM - DETERMINE CORRECT COMM AP.
HSTNRQ - HOST NAME REQUEST PROCESSING.

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OFFCLQ	- HANDLE MESSAGES FOR OFF CLUSTER.
RMVAST	- REMOVE ASTERIKS FROM MESSAGE HEADER.
RTESND	- ROUTE AND SEND A MESSAGE.

USED IN MAIN PROGRAM(S):

INICLK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: APDEAD
PURPOSE: PROCESS AP DYING MESSAGE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APDEAD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- PROCESS AN AP DYING MESSAGE BY UP-
DATING THE AP STATUS TABLE. IF NOT IN THE
IISS SHUTDOWN MODE AND THE AP'S KIDS ARE DEAD
AND THE AP IS NOT IT'S OWN PARENT(SOME UI APS)
THEN SEND A CH:LD STATUS MESSAGE TO THE PARENT.
IF THE AP IS IT'S OWN PARENT THEN CALL 'CLNUP'
TO DELETE THE AP STATUS ENTRY. THE INSTANCE
COUNT IS ALSO DECREMENTED AND THE AP OPERATING
TABLE IS UPDATED. FINALLY, THE WAIT-INIT
QUEUE IS CHECKED FOR AN INIT MESSAGE AWAITING
A FREE INSTANCE SO IT CAN BE PROCESSED. IF IN
SHUTDOWN MODE, 'SEARCH-START-FLG ALDEAD' IS
CALLED TO DETERMINE IF THE DEAD AP WAS THE LAST
TO DIE ON THE APC.

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ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.

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TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
APOBUF	- AP OPERATING INFO RECORD.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
KIDST	- CHECK IF ALL CHILD APS ARE DEAD.
SNDCSM	- SEND CHILD STATUS MESSAGE TO PARENT AP.
CLNUP	- CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
WTINIT	- CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.
ALDEAD	- CHECK IF ALL APS ON APC ARE DEAD
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDGAN	- SEND CANNED MESSAGE TO AP.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.

CALLED DIRECTLY BY:

APSTAT	- PROCESS AP STATUS MESSAGES.
--------	-------------------------------

USED IN MAIN PROGRAM(S):

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INICKK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: APIINI
PURPOSE: INITIALIZE THE AP INFORMATION TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APIINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-INFO-TABLE - RECRD
RET-CODE - DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: APITBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE AP
ROUTING TABLE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APITBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-INFO-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.

ROUTINES CALLED:

RANDIN - PROVIDE A RANDOM NUMBER FOR THE NTM TABLE
ROUTINES.

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CALLED DIRECTLY BY:

HSTNRQ - HOST NAME REQUEST PROCESSING.
MPUINF - SUPPLY MPU INFORMATION TO MESSAGE HEADER.
PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: APOINI
PURPOSE: INITIALIZE AP OPERATING TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APOINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INITIALIZES THE AP-OPERATING INFO TABLE BY MOVING
SPACES TO THE ENTRIES. AS THIS IS A DYNAMIC TABLE,
THE SPACE MUST BE CLEAN. NOTE - FILES ARE NOT
ACCESSED AT ALL.
-

ARGUMENTS:

AP-OP-INFO-TABLE = RECRD
RET-CODE =

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TELAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT

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POINT.

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NTM/MPU Module Documentation

NAME: APOTBL
PURPOSE: TABLE MANAGEMENT FUNCTION FOR THE AP
OPERATING TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APOTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-OP-INFO-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
APO-BUFFER = RECRD
RET-CODE = DSPLY [X(05)]
CALLING-MODULE = DSPLY [X(06)]

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.

CALLED DIRECTLY BY:

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ALDEAD	- CHECK IF ALL APS ON APC ARE DEAD
APDEAD	- PROCESS AP DYING MESSAGE
IATCHK	- AGE I'M ALIVE TABLE ENTRIES.
IMALIV	- PROCESS I'M ALIVE MESSAGE.
INITAP	- INITIATE THE APPLICATION PROCESS.
PFINIT	- PERFORM AP INITIATION.
SHTAPC	- SHUTDOWN THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: APSINI
PURPOSE: INITIALIZE THE AP STATUS TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APSINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INITIALIZES THE AP STATUS TABLE BY MOVING
SPACES TO THE ENTRIES. AS THIS IS A DYNAMIC TABLE,
THE SPACE MUST BE CLEAN. NOTE - FILES ARE NOT
ACCESSED AT ALL.

-

ARGUMENTS:

AP-STATUS-TABLE = RECRD
RET-CODE =

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TElaps - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: APSTAT
PURPOSE: PROCESS AP STATUS MESSAGES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APSTAT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- BASED ON MESSAGE TYPE, ROUTINES ARE
CALLED TO PROCESS THE AP STAT MESSAGES
UPDATED JUN 9

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
NTMSG	- LAYOUT OF NTM MESSAGE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.

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APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

IMALIV	- PROCESS I'M ALIVE MESSAGE.
APDEAD	- PROCESS AP DYING MESSAGE
CHDSTM	- PROCESS CHILD STATUS MESSAGE.
DELCLD	- DELETE CHILD ENTRY FROM CHILD TABLE.
CHDPRC	- CHILD TABLE PROCESSING.

CALLED DIRECTLY BY:

MNGPRC	- MANAGE PROCESS.
--------	-------------------

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

NTM/MPU Module Documentation

NAME: APSTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS AP STATUS
TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APSTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

AP-STATUS-TABLE = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE
CHDPRC - CHILD TABLE PROCESSING.
CHDSTM - PROCESS CHILD STATUS MESSAGE.
CLDCHK - CHECK CHILD TABLE FOR RESERVED ENTRIES.
CLNUP - CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
CNCLSD - PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
DELCLD - DELETE CHILD ENTRY FROM CHILD TABLE.
DLVMSG - DELIVER MESSAGE TO THE AP.
IATCHK - AGE I'M ALIVE TABLE ENTRIES.
IMALIV - PROCESS I'M ALIVE MESSAGE.
INITAP - INITIATE THE APPLICATION PROCESS.
LISTPR - SEND LIST OF ACTIVE AP'S ON THIS APC TO THE
MONITOR AP.

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PFINIT	- PERFORM AP INITIATION.
PRCONC	- PROCESS MESSAGES FROM ON THE CLUSTER.
PRINIT	- PROCESS AP INITIATION MESSAGE.
SDPEND	- PROCESS SHUT DOWN PENDING MSG ON UI APC.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
SHTAPC	- SHUTDOWN THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

INCHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: APTINI
PURPOSE: INITIALIZE THE AP CHARACTERISTICS TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APTINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-CHAR-TABLE = RECRD
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: APTTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE AP
CHARACTERISTIC TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: APTTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-CHAR-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.

ROUTINES CALLED:

RANDIN - PROVIDE A RANDOM NUMBER FOR THE NTM TABLE
ROUTINES.

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CALLED DIRECTLY BY:

CHDSTM - PROCESS CHILD STATUS MESSAGE.
DELCLD - DELETE CHILD ENTRY FROM CHILD TABLE.
LISTPR - SEND LIST OF ACTIVE AP'S ON THIS APC TO THE
MONITOR AP.
MPUINF - SUPPLY MPU INFORMATION TO MESSAGE HEADER.
PFINIT - PERFORM AP INITIATION.
SFTSD - SEND SOFT SHUT DOWN MESSAGE TO AP.
SHTAPC - SHUTDOWN THE AP CLUSTER.
SND CAN - SEND CANNED MESSAGE TO AP.
SND SAP - SEND MESSAGE TO SOURCE AP.
SND STE - SEND SYSTEM STATE MESSAGE TO ALIVE AP.
WRITPR - WRITE PROCESS.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: AUTMSG
PURPOSE: AUTHORITY TABLE CHECK TO SEE IF MESSAGE
CAN BE SENT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: AUTMSG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CHECK THE AUTHORITY TABLE TO SEE IF
MESSAGE CAN BE SENT FROM THE SPEC-
IFIED SOURCE TO THE SPECIFIED DEST.

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
NTMMSG - LAYOUT OF NTM MESSAGE.

CALLED DIRECTLY BY:

POSAUT - CHECK IF AUTH RESTRICTION ON THE DEST AP.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: AUTTEL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE
AUTHORITY CHECK TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: AUTTEL
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AUTHORITY-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.

ROUTINES CALLED:

RANDIN - PROVIDE A RANDOM NUMBER FOR THE NTM TABLE
ROUTINES.

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NTM/MPU Module Documentation

NAME: CATTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE
MESSAGE CATEGORY TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CATTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

MESSAGE-CATEGORY-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLCAT - FORMAT FOR INITIAL APC DATA.

CALLED DIRECTLY BY:

MPUINF - SUPPLY MPU INFORMATION TO MESSAGE HEADER.
VMSGCT - VERIFY MESSAGE CATEGORY.

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USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: CDMFIL
PURPOSE: REQUEST NEW TABLE FROM CDM.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: CDMFIL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: CHDPRC
PURPOSE: CHILD TABLE PROCESSING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CHDPRC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- A CHILD TABLE ENTRY CONSISTING OF
CHILD APNAME, CHILD APCNAME, CHILD STATUS,
AN INDEX TO NEXT SIBLING AND A LOGICAL CHAN
ID IS CREATED AND ENTERED INTO THE TABLE.
IF NO ROOM IN TABLE, A 'RESOURCE UNAVAIL' MSG
IS SENT TO MTR AP AND MSG SOURCE.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF	- DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG	- CANNED FORMAT FOR MESSAGE.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
YSERR	- SYSTEM ERROR CODE DEFINITIONS.
CLDBUF	- CHILD TABLE RECORD BUFFER.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

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INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
CLDTBL - TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SND SAP - SEND MESSAGE TO SOURCE AP.
SND CAN - SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

APSTAT - PROCESS AP STATUS MESSAGES.
PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: CHDSTM
PURPOSE: PROCESS CHILD STATUS MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CHDSTM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

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ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
CLDBUF - CHILD TABLE RECORD BUFFER.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APTBUF - AP CHAR TABLE RECORD BUFFER.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.

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TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
NTMMSG	- LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
CLDTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
DLVMSG	- DELIVER MESSAGE TO THE AP.
DELPRC	- DELETE PROCESSES ON THE VAX.
SNDCLN	- SEND CLEANUP MESSAGE TO CHILD AP.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDCSM	- SEND CHILD STATUS MESSAGE TO PARENT AP.
CLNUP	- CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

APSTAT	- PROCESS AP STATUS MESSAGES.
--------	-------------------------------

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

NTM/MPU Module Documentation

NAME: CLDCHK
PURPOSE: CHECK CHILD TABLE FOR RESERVED ENTRIES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CLDCHK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

CHECK THE CHILD TABLE FOR RESERVED ENTRIES
THAT ARE NOT USED - AFTER 2 TRIES, THE ENTRY WILL BE
DELETED TO MAKE ROOM FOR VALID ENTRIES.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
CLDBUF - CHILD TABLE RECORD BUFFER..
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

ROUTINES CALLED:

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CLDTBL - TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDGAN - SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

TIMCHK - TIME CHECKER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: CLDINI
PURPOSE: INITIALIZE CHILD TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CLDINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INITIALIZES THE CHILD TABLE BY MOVING
SPACES TO THE ENTRIES. AS THIS IS A DYNAMIC TABLE,
THE SPACE MUST BE CLEAN. NOTE - FILES ARE NOT
ACCESSED AT ALL.

ARGUMENTS:

CHILD-TABLE = RECRD
RET-CODE =

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: CLDTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE CHILD
TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CLDTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

CHILD-TABLE = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
CLDBUF - CHILD TABLE RECORD BUFFER..
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.

CALLED DIRECTLY BY:

CHDPRC - CHILD TABLE PROCESSING.
CHDSTM - PROCESS CHILD STATUS MESSAGE.
CLDCHK - CHECK CHILD TABLE FOR RESERVED ENTRIES.
DELCLD - DELETE CHILD ENTRY FROM CHILD TABLE.
KIDST - CHECK IF ALL CHILD APS ARE DEAD.
SDKIDS - SEND SHUTDOWN MESSAGES TO CHILD APS.

USED IN MAIN PROGRAM(S):

INICKH - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT

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POINT.

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NTM/MPU Module Documentation

NAME: CLNHSD
PURPOSE: PROCESS REMOTE HOST SHUTTING DOWN MSG -
STUBBED OUT
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CLNHSD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

MSGBUF -

CALLED DIRECTLY BY:

SYSKOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICKK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: CLNUP
PURPOSE: CLEAN UP THE AP STATUS ENTRY AND CHILD
TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CLNUP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CLEAN UP THE AP STATUS TABLE ENTRY FOR
THE SPECIFIED AP AND CLEAN UP IT'S CHLD TABLE ALSO.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.

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SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDGAN - SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE
CHDSTM - PROCESS CHILD STATUS MESSAGE.
SYSCOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: CMPHDR
PURPOSE: COMPLETE MESSAGE HEADER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CMPHDR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-
CHECKS FOR INVALID BLANKS IN THE MESSAGE HEADER
AND SENDS AN ERROR MESSAGE TO SOURCE AP IF FOUND.
IF NO INVALID BLANKS IN HEADER ARE FOUND THEN 'MPUINF'
IS CALLED TO RETRIEVE AND FILL IN THE MPU INFORMATION.
IF ALL IS SUCCESSFUL, 'SUPDEF' IS CALLED TO FILL IN
DEFAULT DATA AS NECESSARY.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCAT	- FORMAT FOR INITIAL APC DATA.
NTMMSG	- LAYOUT OF NTM MESSAGE.
INIDAT	- FORMAT FOR INITIAL APC DATA.

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ROUTINES CALLED:

```

MPUINF      - SUPPLY MPU INFORMATION TO MESSAGE HEADER.
SND SAP     - SEND MESSAGE TO SOURCE AP.
SND MON     - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SUP DEF     - SUPPLY SYSTEM DEFAULTS.

```

CALLED DIRECTLY BY:

PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: CNCLSD
PURPOSE: PROCESS CANCEL SHUT DOWN MESSAGE ON UI
APC.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CNCLSD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- UPON RECEIVING A CANCEL SHUTDOWN
MESSAGE FROM THE MTR AP, THE MPU
WILL FORWARD THIS MESSAGE TO ALL THE
APPLICATION PROCESSES ON THE UI
CLUSTER. THE UI APS MAY THEN DISPLAY
THE MESSAGE TO THE USERS.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
INIDAT	- FORMAT FOR INITIAL APC DATA.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.

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TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
DLVMSG	- DELIVER MESSAGE TO THE AP.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

SYSCOM	- PROCESS SYSTEM COMMANDS.
--------	----------------------------

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: CRTPRC
PURPOSE: CREATE PROCESSES (DETACHED) ON THE VAX.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: CRTPRC
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

-

ARGUMENTS:

APNAME = RECRD
PRONME = DSPLY [X(13)]
BASE-PRIORITY = DSPLY [S9(9)]
TYPE-FLAG = DSPLY [X]
DIRECTORY-TABLE = RECRD
NTM-RETURN = DSPLY [X(5)]
SS-STATUS = DSPLY [S9(9)]

INCLUDE FILES:

CRTPRD - THE DIRECTORY TABLE FOR CREATE PROCESS.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.

ROUTINES CALLED:

DIRTBL - TABLE MANAGEMENT FUNCTIONS FOR THE DIRECTORY
TABLE.
SYS\$TRNLOG
SYS\$CREPRC

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CALLED DIRECTLY BY:

INITAP - INITIATE THE APPLICATION PROCESS.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: DELCLD
PURPOSE: DELETE CHILD ENTRY FROM CHILD TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DELCLD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- DELETE THE CHILD STATUS TABLE ENTRY
AND SEND THE MESSAGE TO THE PARENT
AP IF REQUIRED.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF	- DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG	- CANNED FORMAT FOR MESSAGE.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
APTBUF	- AP CHAR TABLE RECORD BUFFER.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
CLDBUF	- CHILD TABLE RECORD BUFFER..
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL

TABLE.

TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

CLDTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
DLVMSG	- DELIVER MESSAGE TO THE AP.
APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

APSTAT	- PROCESS AP STATUS MESSAGES.
--------	-------------------------------

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: DELPRC
PURPOSE: DELETE PROCESSES ON THE VAX.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DELPRC
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

PRONME = DSPLY [X(6)]
APNAME = DSPLY [X(5)]
NTM-RETURN = DSPLY [X(5)]
SS-STATUS = DSPLY [S9(9)]

INCLUDE FILES:

DELPRD - THE DIRECTORY TABLE FOR DELETE PROCESS.

ROUTINES CALLED:

SYS\$DELPRC

CALLED DIRECTLY BY:

CHDSTM - PROCESS CHILD STATUS MESSAGE.
SHTAPC - SHUTDOWN THE AP CLUSTER.

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USED IN MAIN PROGRAM(S):

INICLK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: DETCOM
PURPOSE: DETERMINE CORRECT COMM AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DETCOM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- GIVEN THE MESSAGE DESTINATION (APCNAME),
THE DEST HOST IS FOUND IN THE APC STATUS TABLE AND
THE COMM PROC NAME IS DERIVED AND RETURNED TO THE
CALLING ROUTINE. IF ERROR OCCURS, A BLANK DEST
COMM PROC NAME WILL BE RETURNED.

ARGUMENTS:

AP-CLUSTER-STATUS-TABLE = RECRD

INCLUDE FILES:

TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
APCBUF - APC RECORD BUFFER.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

APCTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER
STATUS TABLE.

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SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

DLVMSG - DELIVER MESSAGE TO THE AP.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: DIRTEL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE
DIRECTORY TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DIRTEL
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

DIRECTORY-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBIDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.

CALLED DIRECTLY BY:

CRTPRC - CREATE PROCESSES (DETACHED) ON THE VAX.

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USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: DLVMSG
PURPOSE: DELIVER MESSAGE TO THE AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DLVMSG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF THE DESTINATION AP IS ACTIVE, THE MSG
IS WRITTEN TO THE AP'S HOT OR CODE MBX (DEPENDING ON
MSG PRIORITY). IF THE MSG IS A RESPONSE THEN THE ENTRY
IN THE PAIR TABLE IS REMOVED BEFORE WRITE PROCESS IS
PERFORMED. IF THE ENTRY IN THE PAIR TABLE IS NOT FOUND,
THE MSG WILL NOT BE DELIVERED. INSTEAD A MSG WILL BE
SENT TO MTR THAT TIMEOUT EXPIRED ON THE MSG.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

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TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
NTMMSG	- LAYOUT OF NTH MESSAGE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
ERRPRO	- PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

DETCOM	- DETERMINE CORRECT COMM AP.
APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
PFINIT	- PERFORM AP INITIATION.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
RMVPR	- SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
ERRPRO	
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDGAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

CHDSTM	- PROCESS CHILD STATUS MESSAGE.
CNCLSD	- PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
DELCLD	- DELETE CHILD ENTRY FROM CHILD TABLE.
MNGPRC	- MANAGE PROCESS.
PFINIT	- PERFORM AP INITIATION.
PRINIT	- PROCESS AP INITIATION MESSAGE.
RTESND	- ROUTE AND SEND A MESSAGE.
SDPEND	- PROCESS SHUT DOWN PENDING MSG ON UI APC.

USED IN MAIN PROGRAM(S):

INICKK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT

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POINT.

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NTM/MPU Module Documentation

NAME: DLVQUE
PURPOSE: QUEUE MESSAGES TO ON APC AP'S IN DELIVER MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: DLVQUE
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

- WRITES A MESSAGE TO THE ON-APC QUEUE
WHEN THE AP IS UNAVAILABLE (IN INIT
STAGE OR MAILBOX IS FULL).

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

DLVQFI - DELIVER QUEUE FILE.
DLVQFD - DELIVER QUEUE FILE DEFINITION.
DLVQST - DELIVER QUEUE STATUS.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.
OPENDL - OPEN ON-APC DELIVER QUEUE FILES.
WRITED - WRITE TO DELIVER MSG QUEUE.
CLOSED - LOGIC FOR CLOSED APC QUEUE FILE.

CALLED DIRECTLY BY:

SNDKAN - SEND CANNED MESSAGE TO AP.

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SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
 WITH LOGGING.
SND SAP - SEND MESSAGE TO SOURCE AP.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: EXCMPU
PURPOSE: EXECUTE MESSAGE PROCESSING UNIT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: EXCMPU
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- EXCMPU IS THE MAIN PROGRAM FOR THE
MESSAGE PROCESSING UNIT(MPU). IT CALLS ROUTINES
TO PERFORM START UP, REGULAR INPUT PROCESSING
AND APC TERMINATION. EXCMPU ALSO GETS THE
INITIAL APC DATA FROM THE INI.DAT FILE AND
MAPS TO HOST AND APC TABLES.

ARGUMENTS:

HOST-STATUS-TABLE = RECRD
AP-CLUSTER-STATUS-TABLE = RECRD
LINK-STATUS-TABLE = RECRD
LOGON-TABLE = RECRD
MESSAGE-CATEGORY-TABLE = RECRD
DIRECTORY-TABLE = RECRD
LOG-SELECT-STR = RECRD
AP-CHAR-TABLE = RECRD
AP-INFO-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
AUTH-CHECK-TABLE = RECRD
AUTHORITY-TABLE = RECRD
CHILD-TABLE = RECRD
GUAR-DEL-TABLE = RECRD
IM-ALIVE-TABLE = RECRD
MSG-PAIR-TABLE = RECRD

IDATA = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
INPEVB - MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR
 THE APC HOT
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
NTMSG - LAYOUT OF NTM MESSAGE.
TBLHST - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
 TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
 TABLE.
TBLNST - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLLOG - LOGON TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
 KEPT IN GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
 GLOBAL TABLE.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
 ROUTING.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
 TABLE.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
 OVERFLOW SHARED.
TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLACT - AUTHORITY CHECK TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

STRAPC - START UP THE AP CLUSTER.
TRMAPC - TERMINATE THE AP CLUSTER.
PRINPT - PROCESS CLUSTER INPUT.

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CALLED DIRECTLY BY:

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: FSTART
PURPOSE: FINAL START-UP PROCEDURE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: FSTART
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- WAIT ON A MSG FROM MTR WITH THE FINAL
START UP INSTRUCTIONS. IF MTR SENDS AN APC SD MSG OR IF
TIMEOUT OCCURS BEFORE MSG ARRIVES, RET-CODE IS SET TO 0
WHICH WILL CAUSE APC TO TERMINATE. IF CHANGE TABLE
REQUEST IS MADE BY MTR, NEW TABLES FROM CDM WILL BE
REQUESTED BY MPU. IF HOST ALIVE MSG IS SENT, PROCEDURE
RETURNS SUCCESSFULLY.

ARGUMENTS:

IDATA = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
STEBV - START UP DEFINITIONS.
WAITDE - DEBUG MSG FILE BUFFER.
NTMMSG - LAYOUT OF NTM MESSAGE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
INPEVB - MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR
THE APC HOT
INIDAT - FORMAT FOR INITIAL APC DATA.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
WAITON - WAIT ON A MSG.
WTMSG - HANDLE ERRORS WHILE WAITING FOR STARTUP MESSAGES.

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ROUTINES CALLED:

RCVMSG
SETTIM
WAITO2
CNLTIM
GETMSG
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
 WITH LOGGING.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

STRAPC - START UP THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: GDMSGGS
PURPOSE: GUARANTEED DELIVERY MESSAGE HANDLER
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GDMSGGS
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

GUAR-DEL-TABLE = RECRD

INCLUDE FILES:

GDDATA	- GUARANTEED DELIVERY DATA.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
FILERR	- THE NTM QUEUE ERROR FILE.
CANMSG	- CANNED FORMAT FOR MESSAGE.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE... A HOST GLOBAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

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TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
NTMMSG	- LAYOUT OF NTM MESSAGE.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDCAN	- SEND CANNED MESSAGE TO AP.
GRDTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED DELIVERY TABLE.
ASCTIM	
MNGPRC	- MANAGE PROCESS.

CALLED DIRECTLY BY:

MNGMSG	- MANAGE MESSAGE.
OFFCLQ	- HANDLE MESSAGES FOR OFF CLUSTER.
PRCONC	- PROCESS MESSAGES FROM ON THE CLUSTER.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
STRAPC	- START UP THE AP CLUSTER.
SYSKOM	- PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: GENSER
PURPOSE: GENERATE MESSAGE SERIAL NUMBER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GENSER
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- GENERATE THE NEXT MESSAGE SERIAL NUMBER.
IF THE SERIAL NUMBER HAS REACHED THE
MAXIMUM SERIAL NUMBER (9999999) THEN
SERIAL NUMBER IS SET TO 1 AGAIN, OTHER-
WISE THE SERIAL NUMBER IS SIMPLY INCRE-
MENTED BY 1.

ARGUMENTS:

IDATA = RECRD

INCLUDE FILES:

INIDAT - FORMAT FOR INITIAL APC DATA.

CALLED DIRECTLY BY:

PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.
SNDCAN - SEND CANNED MESSAGE TO AP.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
WITH LOGGING.
SND SAP - SEND MESSAGE TO SOURCE AP.

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USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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1 November 1985

NTM/MPU Module Documentation

NAME: GETNAM
PURPOSE: VAX PROCEDURE TO GET AP'S OS PROCESS NAME.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GETNAM
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

PROCESSNAME = DSPLY [X(13)]
NTM-RETURN = DSPLY [X(5)]

ROUTINES CALLED:

SYS\$GETJPI

CALLED DIRECTLY BY:

INITST - INITIAL START-UP PROCEDURE.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: GRDTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE
GUARANTEED DELIVERY TABL
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: GRDTBL
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

GUAR-DEL-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
FILERR - THE NTM QUEUE ERROR FILE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.

ROUTINES CALLED:

RANDIN - PROVIDE A RANDOM NUMBER FOR THE NTM TABLE

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ROUTINES.

CALLED DIRECTLY BY:

GDMSGs - GUARANTEED DELIVERY MESSAGE HANDLER.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: HSTNRQ
PURPOSE: HOST NAME REQUEST PROCESSING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: HSTNRQ
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

AP-INFO-TABLE = RECRD

INCLUDE FILES:

HNRTMG	- HOST NAME RETURN MSG.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
APIBUF	- API RECORD BUFFER.
APCBUF	- APC RECORD BUFFER.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
NTMMSG	- LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

APITBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING TABLE
APCTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER

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STATUS TABLE.
VIAOWN - SEND MESSAGE VIA OWN APC INPUT MAILBOX.

CALLED DIRECTLY BY:

SYSCOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: HSTTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE HOST
STATUS TABLE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: HSTTBL
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

HOST-STATUS-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLHST - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.

NTM/MPU Module Documentation

NAME: IATCHK
PURPOSE: AGE I'M ALIVE TABLE ENTRIES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: IATCHK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CHECK EACH ENTRY IN I'M ALIVE TABLE FOR A LATE I'M ALIVE MESSAGE. IF THE NUMBER OF TRIES ON THE ENTRY IS THREE, THEN THE AP IS MUCH TOO LATE IN SENDING IT'S I'M ALIVE MESSAGE SO THE ENTRY IS DELETED AND AN ERROR MESSAGE IS SENT TO THE MONITR AP AND AN UNSUCCESSFUL INIT MESSAGE IS SENT TO THE PARENT AP. IF THE NUMBER OF TRIES ON THE ENTRY IS LESS THAN THREE, THE NUMBER IS UPDATED AND THE ENTRY IS MODIFIED IN THE TABLE.

ARGUMENTS:

AP-CHAR-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
IM-ALIVE-TABLE = RECRD
IDATA = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
TBLDEF - INPUT FOR TABLE ROUTINES.
BADINI - CANNED UNSUCCESSFUL INIT MSG.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.

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IATBUF	- I'M ALIVE RECORD BUFFER.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
APOBUF	- AP OPERATING INFO RECORD.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

ROUTINES CALLED:

IATTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
VIAOWN	- SEND MESSAGE VIA OWN APC INPUT MAILBOX.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

TIMCHK	- TIME CHECKER.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: IATINI
PURPOSE: INITIALIZE THE I'M ALIVE TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: IATINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INITIALIZES THE IM ALIVE TABLE BY MOVING
SPACES TO THE ENTRIES. AS THIS IS A DYNAMIC TABLE,
THE SPACE MUST BE CLEAN. NOTE - FILES ARE NOT
ACCESSED AT ALL.
-

ARGUMENTS:

IM-ALIVE-TABLE = RECRD
RET-CODE =

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: IATTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE I'M
ALIVE TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: IATTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

IM-ALIVE-TABLE = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TELIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

ERRPRO

CALLED DIRECTLY BY:

IATCHK - AGE I'M ALIVE TABLE ENTRIES.
IMALIV - PROCESS I'M ALIVE MESSAGE.
INITAP - INITIATE THE APPLICATION PROCESS.
SENDAP - HANDLE MESSAGES FOR APS ON CLUSTER.

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USED IN MAIN PROGRAM(S):

INICKK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: IMALIV
PURPOSE: PROCESS I'M ALIVE MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: IMALIV
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- UPDATE THE AP STATUS TABLE ENTRY TO
"ALIVE" AND SEND STATE MSG TO THE AP. REMOVE ENTRY
FROM IM-ALIVE TABLE AND SEND QUEUED MSG (IF ONE)
TO AP. IF NECESSARY, SEND UNSOLICITED INIT ACK TO
PARENT AP NTM. IF THE AP THAT IS ALIVE IS "UI AP"
OR THE MONITR AP THEN THE NUMBER OF INSTANCES IN
THE AP OPERATING TABLE MUST BE INCREMENTED AS THE
MPU DID NOT INIT THESE.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
QMSG - QUEUE MESSAGE.
PSSAPC - APC NAME VALUES.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
IATBUF - I'M ALIVE RECORD BUFFER.
SYSTAT - SYSTEM STATUS CODE DEFINITIONS.

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SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
APOBUF	- AP OPERATING INFO RECORD.
APIBUF	- API RECORD BUFFER.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE... A HOST GLOBAL TABLE.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
IATTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
INITAK	- BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
SND SAP	- SEND MESSAGE TO SOURCE AP.
SND MON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SND STE	- SEND SYSTEM STATE MESSAGE TO ALIVE AP.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
SND CAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

APSTAT	- PROCESS AP STATUS MESSAGES.
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USED IN MAIN PROGRAM(S):

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INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN A
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: IISSYS
PURPOSE: SUBROUTINE USED TO REPLACE OR MODIFY THE
 IISS SYSGEN DATA
LANGUAGE: VAX-11 COBOL
SOURCE FILE: IISSYS

DESCRIPTION:

ARGUMENTS:

CHOICE-INDICATOR = DSPLY [X]

INCLUDE FILES:

BASYSG - MONITOR SYSGEN DATA

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NTM/MPU Module Documentation

NAME: INCHK
PURPOSE: CHECK WAIT-FOR-INITIALIZATION QUEUE FOR
MESSAGE FOR A GIVEN
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INCHK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- THIS ROUTINE PROCESSES EACH INITIATION
MESSAGE IN THE WAITING INITIATION
MESSAGE QUEUE BY CALLING 'PFINIT' TO
PERFORM INITIATION ON THE SPECIFIED
APPLICATION PROCESS.

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

WTINIQ - WAIT INIT QUEUE ASSIGNMENTS.
WTIQFD - WAIT INIT QUEUE FILE DEFINITIONS.
NTMMSG - LAYOUT OF NTM MESSAGE.
WTIQST - FILE STATUS DEFINITIONS.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;

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OVERFLOW SHARED.

TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
OPIINI	- PURPOSE NOT KNOWN.
RDWTIQ	- READ/WRITE TO QUEUE.
REWINI	- WAIT-INIT QUEUE FILE
CLQINI	- CLEAN INIT QUEUE.

ROUTINES CALLED:

PFINIT	- PERFORM AP INITIATION.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.

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NTM/MPU Module Documentation

NAME: INITAK
PURPOSE: BUILD AND SEND AN UNSOLICITED INITIATION
ACCEPT MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITAK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND AN ACKNOWLEDGEMENT ON AN
INITIATION THAT TOOK PLACE DUE TO AN
UNSOLICITED INIT MESSAGE (NOT CAT 'H').

ARGUMENTS:

NTM-MESSAGE - RECRD

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
CHKSTS - CHECK STATUS
UNINAK - INITIATION ACK MESSAGE.
NTMMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMSG

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SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEV

CALLED DIRECTLY BY:

IMALIV - PROCESS I'M ALIVE MESSAGE.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: INITAP
PURPOSE: INITIATE THE APPLICATION PROCESS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITAP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SPAWN THE SPECIFIED AP VIA THE OPERATING SYSTEM. IF THE SPAWN IS SUCCESSFUL THEN AN ENTRY IN THE STAT TABLE IS CREATED FOR THE AP WITH THE INIT STATUS. IF THE AP IS NOT AN MPU THEN THE # INSTANCES IN THE AP OP TABLE IS UPDATED AND AN ENTRY IS MADE IN IM ALIVE TABLE. IF THE SPAWN IS UNSUCC, AN UNSUCC INIT MSG IS SENT TO THE AP'S PARENT.

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
BADINI	- CANNED UNSUCCESSFUL INIT MSG.
YSERR	- SYSTEM ERROR CODE DEFINITIONS.
IATBUF	- I'M ALIVE RECORD BUFFER.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
DWTQST	- DATA UNIT, QUEUE STATUS.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.

TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
APOBUF	- AP OPERATING INFO RECORD.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
CRTPRC	- CREATE PROCESSES (DETACHED) ON THE VAX.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
IATTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
VIAOWN	- SEND MESSAGE VIA OWN APC INPUT MAILBOX.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

PFINIT	- PERFORM AP INITIATION.
PRINIT	- PROCESS AP INITIATION MESSAGE.
SYSKOM	- PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: INITST
PURPOSE: INITIAL START-UP PROCEDURE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: INITST
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

IDATA = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
STEBB - START UP DEFINITIONS.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
INPEVB - MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR
THE APC HOT
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
INIDAT - FORMAT FOR INITIAL APC DATA.
MBXNME - APC INPUT MAILBOX NAME FORMAT.

ROUTINES CALLED:

GETNAM - VAX PROCEDURE TO GET AP'S OS PROCESS NAME.
CRTMBX
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
WITH LOGGING.

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SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

STRAPC - START UP THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: KIDST
PURPOSE: CHECK IF ALL CHILD APS ARE DEAD.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: KIDST
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- DETERMINE IF ALL THE KIDS FOR A GIVEN AP
ARE DEAD.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
CLDBUF - CHILD TABLE RECORD BUFFER..
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

CLDTBL - TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
SNDKAN - SEND CANNED MESSAGE TO AP.

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CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE

USED IN MAIN PROGRAM(S):

**INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.**
**MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.**

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NTM/MPU Module Documentation

NAME: LGMESG
PURPOSE: SEND A MESSAGE TO LOGTASK BASED ON
LOGGING SELECTION.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: LGMESG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- A TIMESTAMP AND THE ERRCODE (COULD
BE ZERO, NO ERROR) ARE ATTACHED TO THE MSG AND THE
MSG IS WRITTEN TO THE MSG LOG FILE. IF THE MSG IS
A GUARANTEED DELIVERY MSG, AN ACK OR NACK WILL BE
SENT TO THE SOURCE.

ARGUMENTS:

NTM-MESSAGE = RECRD
LOG-SELECT-STR = RECRD
ERRCODE =
IDATA = RECRD

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
LGMSG - FORMAT OF LOGGED MESSAGE.
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
NTMMSG - LAYOUT OF NTM MESSAGE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION
KEPT IN GLOBAL.

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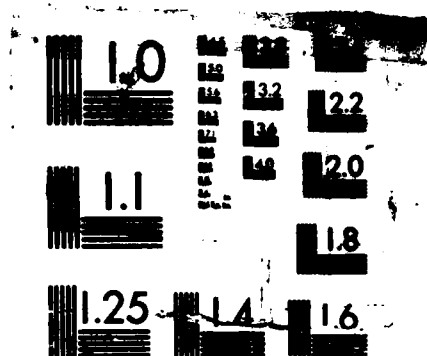
AD-A182 061 INTEGRATED INFORMATION SUPPORT SYSTEM (IISS) VOLUME 6 3/5
NETWORK TRANSACTION. (U) GENERAL ELECTRIC CO

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MICROCOPY RESOLUTION TEST CHART

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INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
ASCTIM
SNDMSG
RELEVB

CALLED DIRECTLY BY:

MNGMSG - MANAGE MESSAGE.
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
WITH LOGGING.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: LISTPR
PURPOSE: SEND LIST OF ACTIVE AP'S ON THIS APC TO
THE MONITOR AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: LISTPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND A LIST OF ALL THE ACTIVE
APPLICATION PROCESSES ON THE CLUSTER
TO THE MONITR AP. FOR EACH AP ON THE
LIST, THE FOLLOWING INFO IS GIVEN:
THE AP'S PROCESS NAME
THE AP'S ABORT CHARACTERISTIC
THE AP'S ORIGINAL SOURCE
THE LIST IS LIMITED TO 100 APS.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

APTBUF	- AP CHAR TABLE RECORD BUFFER.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
AAMSG	- 28 JAN 84 : CHANGES FOR LONGER AP NAME
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TBLDEF	- INPUT FOR TABLE ROUTINES.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.

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INIDAT - FORMAT FOR INITIAL APC DATA.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

ROUTINES CALLED:

APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
 CHARACTERISTIC TABLE.
VIAOWN - SEND MESSAGE VIA OWN APC INPUT MAILBOX.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

SYSCOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: LSTTBL
PURPOSE: TABLE MANAGEMENT FUNCTIONS FOR THE LINK
STATUS TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: LSTTBL
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

LINK-STATUS-TABLE = RECRD
FUNCTION-CODE = DSPLY [X(2)]
SEARCH-FIELD = DSPLY [X(30)]
SEARCH-VALUE = DSPLY [X(72)]
SEARCH-START-FLAG = DSPLY [X]
TABLE-INDEX = DSPLY
TABLE-ENTRY-BUFFER = DSPLY [X(72)]
RET-CODE = DSPLY [X(5)]

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLIST - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.

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NTM/MPU Module Documentation

NAME: MAPHST
PURPOSE: MAP TO THE HOST TABLES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MAPHST
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

IISS-INSTANCE = DSPLY [X]

INCLUDE FILES:

TBLHST - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLLST - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TELLOG - LOGON TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TB�DIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
HSTGLE - HOST GLOBAL SECTION END.

ROUTINES CALLED:

ITMADR
SYS\$MGBLSC

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CALLED DIRECTLY BY:

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: MNGMSG
PURPOSE: MANAGE MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MNGMSG
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

-
MNGMSG CALLS PRCONC TO PROCESS MESSAGES FROM ON THE CLUSTER AND VYOFFC TO PROCESS MESSAGES FROM OFF THE CLUSTER. IF THE CURRENT APC IS COMM AND THE MESSAGE IS FROM OFF THE CLUSTER THEN ASTERIKS ARE REMOVED (AND REPLACED WITH BLANKS) FROM THE HEADER. ALL MESSAGES ARE LOGGED IN THE APC'S MSG LOG. IF ALL IN MANAGE MESSAGE GOES WELL AN ERROR CODE OF ZEROS WILL BE RETURNED TO PRINPT, THE CALLING PROGRAM.

ARGUMENTS:

AP-CHAR-TABLE = RECRD
LOG-SELECT-STR = RECRD
AP-CLUSTER-STATUS-TABLE = RECRD
AP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
AUTH-CHECK-TABLE = RECRD
AUTHORITY-TABLE = RECRD
CHILD-TABLE = RECRD
GUAR-DEL-TABLE = RECRD
MESSAGE-CATEGORY-TABLE = RECRD
MSG-PAIR-TABLE = RECRD
DIRECTORY-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
IM-ALIVE-TABLE = RECRD

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AP-DEAD-FLG -
NTM-MESSAGE - RECRD
ERRCODE -
IDATA - RECRD
SDFLG - DSPLY [X]

INCLUDE FILES:

GDARGS - GUARANTEED DELIVERY ARGS.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLACT - AUTHORITY CHECK TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
NTMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.
VYOFFC - VERIFY MESSAGES FROM OFF THE CLUSTER.
RMVAST - REMOVE ASTERIKS FROM MESSAGE HEADER.
LGMESG - SEND A MESSAGE TO LOGTASK BASED ON LOGGING
SELECTION.
GDMSGs - GUARANTEED DELIVERY MESSAGE HANDLER.

CALLED DIRECTLY BY:

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PRINPT - PROCESS CLUSTER INPUT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: MNGPRC
PURPOSE: MANAGE PROCESS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MNGPRC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- BASED ON MSG CATEGORY, ROUTINES ARE
CALLED TO PROCESS THE CURRENT MESSAGE.

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.

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SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

APSTAT	- PROCESS AP STATUS MESSAGES.
PFINIT	- PERFORM AP INITIATION.
SYSKOM	- PROCESS SYSTEM COMMANDS.
DLVMSG	- DELIVER MESSAGE TO THE AP.

CALLED DIRECTLY BY:

GDMSG	- GUARANTEED DELIVERY MESSAGE HANDLER.
RTESND	- ROUTE AND SEND A MESSAGE.

USED IN MAIN PROGRAM(S):

INICK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: MPRINI
PURPOSE: INITILIAZE THE MESSAGE PAIR TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MPRINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INITIALIZES THE MSG-PAIR-TABLE BY MOVING
SPACES TO THE ENTRIES. AS THIS IS A DYNAMIC TABLE,
THE SPACE MUST BE CLEAN. NOTE - FILES ARE NOT
ACCESSED AT ALL.
-

ARGUMENTS:

MSG-PAIR-TABLE = RECRD
RET-CODE =

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.

CALLED DIRECTLY BY:

TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: MPRTBL
PURPOSE: TABLE MANAGEMENT FUNCTION FOR THE MESSAGE
PAIR TABLE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MPRTBL
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

MSG-PAIR-TABLE = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.

CALLED DIRECTLY BY:

ADDPR - ADD ENTRY TO MESSAGE PAIR TABLE.
PAIRCK - CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
RMVPR - SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN
REMOVE IT.

USED IN MAIN PROGRAM(S):

INICKK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE

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FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: MPUGEN
PURPOSE: BUILD IISS SYSGEN FILE
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: MPUGEN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

INCLUDE FILES:

BASYSG - MONITOR SYSGEN DATA.

ROUTINES CALLED:

IISSYS
MTRGEN

NTM/MPU Module Documentation

NAME: MPUINF
PURPOSE: SUPPLY MPU INFORMATION TO MESSAGE HEADER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: MPUINF
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- MPUINF GETS THE MESSAGE CATEGORY RECORD FROM THE MESSAGE CATEGORY TABLE AND INSERTS THE APPROPRIATE INFORMATION FROM THE RECORD INTO THE HEADER (E.G. MESSAGE PRIORITY, LOGGING REQUIREMENT, STATUS COLLECTION). THE DESTINATION APC NAME IS FILLED IN ACCORDING TO INFORMATION ON THE AP INFORMATION RECORD AND THE MSG SOURCE PRIORITY IS FILLED IN FROM INFORMATION ON THE AP CHAR TABLE. IF AN ERROR OCCURS, A MESSAGE IS SENT TO THE MONITR AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APTBUF - AP CHAR TABLE RECORD BUFFER.
APIBUF - API RECORD BUFFER.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
CATBUF - THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.

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TBLCAT	- FORMAT FOR INITIAL APC DATA.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
INIDAT	- FORMAT FOR INITIAL APC DATA.
NTMMSG	- LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

CATTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE MESSAGE CATEGORY TABLE.
APITBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING TABLE
APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDSAP	- SEND MESSAGE TO SOURCE AP.

CALLED DIRECTLY BY:

CMPHDR	- COMPLETE MESSAGE HEADER.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: MPUINI
PURPOSE: MESSAGE PROCESSING UNIT ENTRY POINT AND
EXIT POINT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: MPUINI
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- MPUINI READS THE INDIVIDUAL APC'S
INITIAL APC DATA FROM THE SYSGEN FILE AND MAPS TO
HOST AND APC TABLES. IT WILL THEN CALL "EXCMPU" TO
CONTINUE APC STARTUP AND NORMAL PROCESSING. WHEN
"EXCMPU" RETURNS CONTROL TO THIS PROGRAM IT WILL
CLEAN-UP THEN STOP THE MPU.

INCLUDE FILES:

TBLHST - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLLST - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLLOG - LOGON TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
HSTGLE - HOST GLOBAL SECTION END.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.

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TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAUT	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLACT	- AUTHORITY CHECK TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.

ROUTINES CALLED:

GETNAM	- VAX PROCEDURE TO GET AP'S OS PROCESS NAME.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
MAPHST	- MAP TO THE HOST TABLES.
SNDMTR	- SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
EXCMPU	- EXECUTE MESSAGE PROCESSING UNIT.
ENDRUN	

NTM/MPU Module Documentation

NAME: OFFCLQ
PURPOSE: HANDLE MESSAGES FOR OFF CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: OFFCLQ
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- PROCESS MESSAGES FOR OFF-APC IF APC
IS AVAILABLE.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
FILERR - THE NTM QUEUE ERROR FILE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVMBX - AP MAILBOX NAME.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
GDARGS - GUARANTEED DELIVERY ARGS.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL

TABLE.

TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
NTMMSG	- LAYOUT OF NTM MESSAGE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
APCBUF	- APC RECORD BUFFER.
WRTMSG	- SEND A MESSAGE TO MAILBOX.

ROUTINES CALLED:

SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDMSG	
RELEV	
APCTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER STATUS TABLE.
GDMSG	- GUARANTEED DELIVERY MESSAGE HANDLER.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

RTESND	- ROUTE AND SEND A MESSAGE.
TIMCHK	- TIME CHECKER.

USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: OUTGDM
PURPOSE: OUTPUT GUARANTEED DELIVERY MESSAGE --
STUBBED OUT
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: OUTGDM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

MSGBUF = DSPLY [X(2000)]

INCLUDE FILES:

INIDAT - FORMAT FOR INITIAL APC DATA.

NTM/MPU Module Documentation

NAME: PADZER
PURPOSE: CONVERT BINARY FIELD TO A CHARACTER FIELD
AND PAD WITH ZERO
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PADZER
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CONVERT THE INPUT BINARY FIELD TO A
CHARACTER FIELD AND PAD WITH ZEROS IF
NECESSARY. RETURN THE (PADDED) CHARACTER
FIELD TO THE CALLING PROGRAM.

ARGUMENTS:

INPUT-COMP =

CALLED DIRECTLY BY:

ADDPR - ADD ENTRY TO MESSAGE PAIR TABLE.
PAIRCK - CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: PAIRCK
PURPOSE: CHECK MESSAGE PAIR TABLE FOR TIMED OUT
MESSAGES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PAIRCK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- ENTRIES FROM THE PAIR TABLE ARE READ IN ONE AT A TIME AND PROCESSED. IF THE TIME SPECIFIED ON THE ENTRY IS EARLIER THAN THE CURRENT SYSTEM TIME, THEN THE ENTRY IS DELETED AND AN TIMEOUT ERROR MESSAGE IS SENT TO THE MONITR AP. OTHERWISE, THE ENTRY IS LEFT AS IS IN THE TABLE.

ARGUMENTS:

MSG-PAIR-TABLE = RECRD

INCLUDE FILES:

SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
TOMSG	- TIMEOUT ERROR MESSAGE.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
MPRBUF	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLDEF	- INPUT FOR TABLE ROUTINES.
INIDAT	- FORMAT FOR INITIAL APC DATA.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.

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ROUTINES CALLED:

GETTIM
PADZER - CONVERT BINARY FIELD TO A CHARACTER FIELD AND
 PAD WITH ZEROS.
MPRTBL - TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR
 TABLE.
VIAOWN - SEND MESSAGE VIA OWN APC INPUT MAILBOX.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

TIMCHK - TIME CHECKER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: PFINIT
PURPOSE: PERFORM AP INITIATION.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PFINIT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

- AP STATUS TABLE IS CHECKD TO SEE IF ANY
INSTANCES OF THE AP ALREADY EXIST WITH THE STATUS
"AWAITING INIT". IF ONE IS FOUND THEN THE AWAIT INIT
IS PROCESSED, OTHERWISE THE AP INFO TABLE IS ACCESSED TO
ATTAIN THE NUMBER OF INSTANCES ALREADY INITIATED.

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APOBUF - AP OPERATING INFO RECORD.
APTBUF - AP CHAR TABLE RECORD BUFFER.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.

NTMSG	- LAYOUT OF NTM MESSAGE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
DLVMSG	- DELIVER MESSAGE TO THE AP.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
INITAP	- INITIATE THE APPLICATION PROCESS.
APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
PRINIT	- PROCESS AP INITIATION MESSAGE.
SNDCSM	- SEND CHILD STATUS MESSAGE TO PARENT AP.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

DLVMSG	- DELIVER MESSAGE TO THE AP.
INICLK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MNGPRC	- MANAGE PROCESS.
WTINIT	- CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

USED IN MAIN PROGRAM(S):

INICLK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: POSAUT
PURPOSE: CHECK IF AUTH RESTRICTION ON THE DEST AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: POSAUT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- LOOK UP DEST AP IN AUTHORITY CHECK TABLE
TO SEE IF THE AP HAS AUTHORIZATION RESTRICTIONS ON IT.
IF SO, CALL A ROUTINE TO AUTHORIZE THE MSG ELSE EXIT
THE PROGRAM.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
ACTBUF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLACT	- AUTHORITY CHECK TABLE.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAUT	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

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ACTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY
 CHECK TABLE
AUTHMSG - AUTHORITY TABLE CHECK TO SEE IF MESSAGE CAN BE
 SENT.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SND SAP - SEND MESSAGE TO SOURCE AP.

CALLED DIRECTLY BY:

PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: PRCONC
PURPOSE: PROCESS MESSAGES FROM ON THE CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PRCONC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

- PRCONC PROCESSES MESSAGES IF THEY ARE FROM ON THE APC. MESSAGES WITH NEW HEADERS THAT ARE NOT SENT BY THE MPU HAVE THEIR MSG CATEGORIES VERIFIED. IF THE CATEGORY IS VALID, THE MESSAGE IS AUTHORIZED AND THE MESSAGE HEADER IS COMPLETED. CERTAIN MESSAGES HAVE SPECIAL TABLE PROCESSING DONE SUCH AS PAIRED MESSAGES, INIT MESSAGES AND GUARANTEED DELIVERY MESSAGES. IF AT ANY POINT A MESSAGE ERROR OCCURS, A MESSAGE "NACK" IS SENT TO THE SOURCE OF THE MESSAGE OTHERWISE AN ACK IS SENT (UNDER CERTAIN CONDITIONS) AND A SERIAL NUMBER IS ATTACHED TO THE MESSAGE. IF THE MESSAGE HAS AN OLD HEADER OR IS FROM THE MPU, THE MPU SIMPLY ATTACHES A SERIAL NUMBER TO IT AND ALL OTHER VERIFICATION IS BY-PASSED.

ARGUMENTS:

AP-CHAR-TABLE = RECRD
AP-INFO-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
AUTH-CHECK-TABLE = RECRD
AUTHORITY-TABLE = RECRD
CHILD-TABLE = RECRD
GUAR-DEL-TABLE = RECRD
MESSAGE-CATEGORY-TABLE = RECRD

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MSG-PAIR-TABLE = RECRD
DIRECTORY-TABLE = RECRD
AP-CLUSTER-STATUS-TABLE = RECRD
IM-ALIVE-TABLE = RECRD
SDFLG = DSPLY [X]
AP-DEAD-FLG =
NTM-MESSAGE = RECRD
ERRCODE =
IDATA = RECRD
LOG-SELECT-STR = RECRD

INCLUDE FILES:

SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APSEBU - THE AP STATUS TABLE APC GLOBAL.
APIBUF - API RECORD BUFFER.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
GDARGS - GUARANTEED DELIVERY ARGS.
NTMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.
TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLACT - AUTHORITY CHECK TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.

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ROUTINES CALLED:

VMSGCT - VERIFY MESSAGE CATEGORY.
POSAUT - CHECK IF AUTH RESTRICTION ON THE DEST AP.
CMPHDR - COMPLETE MESSAGE HEADER.
GENSER - GENERATE MESSAGE SERIAL NUMBER.
ADDPR - ADD ENTRY TO MESSAGE PAIR TABLE.
APITBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING
TABLE
CHDPRC - CHILD TABLE PROCESSING.
APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
GDMSGs - GUARANTEED DELIVERY MESSAGE HANDLER.
SNDsAP - SEND MESSAGE TO SOURCE AP.
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
WITH LOGGING.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

MNGMSG - MANAGE MESSAGE.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME:	PRGDAK
PURPOSE:	PURPOSE NOT KNOWN - STUBBED OUT.
LANGUAGE:	VAX-11 COBOL
MODULE TYPE:	SUBROUTINE
SOURCE FILE:	PRGDAK
SOURCE FILE TYPE:	.COB
HOST:	
SUBSYSTEM:	NTM
SUBDIRECTORY:	MPU
DOCUMENTATION GROUP:	NTMMPU

DESCRIPTION:

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ARGUMENTS:

MSGBUF -

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NTM/MPU Module Documentation

NAME: PRINIT
PURPOSE: PROCESS AP INITIATION MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PRINIT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- THE CURRENT NUMBER OF CONNECTIONS ON EACH AP IS COMPARED TO THE MAX NUMBER OF CONNECTIONS ALLOWED. IF ONE INSTANCE OF THE AP HAS : MAX NUMBER OF CONNS THEN A NEW CONN WILL BE MADE TO THAT AP OTHERWISE A NEW INSTANCE OF THE AP MUST BE INITIATED (IF MAX # OF INSTANCES HAS NOT BEEN REACHED). IN THE CASE WHERE MAX NUMBER OF INSTANCES OF AP HAVE BEEN INITIATED AND ALL HAVE REACHED THE MAX NUMBER OF CONNS, THE MSG WILL BE QUEUED (IF MAX NUMBER OF QUEUED MSGS HAS NOT BEEN REACHED).

ARGUMENTS:

DIRECTORY-TABLE = RECRD
AP-CHAR-TABLE = RECRD
AP-CLUSTER-STATUS-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
IM-ALIVE-TABLE = RECRD
MSG-PAIR-TABLE = RECRD
GUAR-DEL-TABLE = RECRD
CHILD-TABLE = RECRD
AP-INFO-TABLE = RECRD
SDFLG = DSPLY [X]
AP-DEAD-FLG =
NTM-MESSAGE = RECRD

APO-BUF - RECRD
APT-BUF - RECRD
APO-INDX -
IDATA - RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE... A HOST GLOBAL
TABLE.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
NTMMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.
APOBUF - AP OPERATING INFO RECORD.
APTBUF - AP CHAR TABLE RECORD BUFFER.

ROUTINES CALLED:

APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
DLVMSG - DELIVER MESSAGE TO THE AP.
INITAP - INITIATE THE APPLICATION PROCESS.
QWTINI - WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW
TO A WAIT QUEUE
SND SAP - SEND MESSAGE TO SOURCE AP.
SND MON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

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SNDKAN - SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

PFINIT - PERFORM AP INITIATION.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: PRINPT
PURPOSE: PROCESS CLUSTER INPUT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: PRINPT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF APC IS NOT IN A SHUTDOWN MODE, THE MPU WILL WAIT ON EVENTS AND HANDLE THE APC INPUT. THREE EVENTS ARE WAITED FOR: TIME TIMEOUT, MSG IN HI-PRIORITY MBX AND LOW-PRIORITY MBX. WHEN A MBX EVENT TAKES PLACE, THE MSG IS READ AND PROCESSED VIA MANAGE MESSAGE AND THEN (IF NO ERROR) THE MSG IS ROUTED AND SENT. IF THE TIMER EVENT TAKES PLACE, A PROCESS IS CALLED TO CHECK THE CERTAIN QUEUES AND TABLES FOR CERTAIN CONDITIONS. IF THE APC IS IN A SHUTDOWN MODE, EVENTS ARE NOT WAITED FOR BUT THE MBXS ARE CHECKED FOR MSGS. THE MSGS ARE READ AND PROCESSED BY A SPECIAL "SHUTDOWN MODE" PROCESS. ONLY AP STATUS MSGS AND SYSTEM COMMANDS WILL GO ON TO BE PROCESSED BY MM AND ROUTE & SEND.

ARGUMENTS:

DIRECTORY-TABLE = RECRD
LOG-SELECT-STR = RECRD
AP-CHAR-TABLE = RECRD
AP-CLUSTER-STATUS-TABLE = RECRD
AP-INFO-TABLE = RECRD
AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
AUTH-CHECK-TABLE = RECRD

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AUTHORITY-TABLE = RECRD
CHILD-TABLE = RECRD
GUAR-DEL-TABLE = RECRD
IM-ALIVE-TABLE = RECRD
MESSAGE-CATEGORY-TABLE = RECRD
MSG-PAIR-TABLE = RECRD
IDATA = RECRD
SDFLG = DSPLY [X]
APCFLG =
AP-DEAD-FLG =
ERRCODE =
H-MBX-EV-BLK = DSPLY [X(2032)]
C-MBX-EV-BLK = DSPLY [X(2032)]
TIMER-EV-BLK = DSPLY [X(80)]
NTM-MESSAGE = RECRD
MBX-FLGS =

INCLUDE FILES:

CHKSTS - CHECK STATUS
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
STEBV - START UP DEFINITIONS.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLDIR - THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLAPI - THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLACT - AUTHORITY CHECK TABLE.
TBLAUT - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCAT - FORMAT FOR INITIAL APC DATA.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
INPEVB - MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR
THE APC HOT

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NTMSG	- LAYOUT OF NTM MESSAGE.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.

ROUTINES CALLED:

SDMODE	- SHUTDOWN MODE PROCESSING.
MNGMSG	- MANAGE MESSAGE.
RTESND	- ROUTE AND SEND A MESSAGE.
SETTIM	
RCVMSG	
WAIT03	
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
TIMCHK	- TIME CHECKER.
CNLTIM	
GETMSG	

CALLED DIRECTLY BY:

EXCMPU	- EXECUTE MESSAGE PROCESSING UNIT.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: QWTINI
PURPOSE: WRITE INIT MESSAGES THAT CANNOT BE
HANDLED NOW TO A WAIT QU
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: QWTINI
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- INIT MESSAGES THAT CANNOT BE PROCESSED
IMMEDIATELY DUE TO THE LIMITATIONS ON
NUMBER OF INSTANCES ALLOWED ARE WRITTEN
TO THE WAIT-INIT QUEUE FOR LATER PROCESSING
UPDATED JUN 9

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

WTINIQ - WAIT INIT QUEUE ASSIGNMENTS.
WTIQFD - WAIT INIT FILE DEFINITIONS.
WTIQST - FILE STATUS DEFINITIONS.
SDMNDT - PURPOSE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
NTMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.
OPQINI - PURPOSE NOT KNOWN.
WRTINI - PURPOSE NOT KNOWN.
CLQINI - CLEAN INIT QUEUE.

ROUTINES CALLED:

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SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

PRINIT - PROCESS AP INITIATION MESSAGE.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: RANDIN
PURPOSE: PROVIDE A RANDOM NUMBER FOR THE NTM TABLE
ROUTINES.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RANDIN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

-

ARGUMENTS:

 FLOAT-VALUE -

CALLED DIRECTLY BY:

 ACTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY
 CHECK TABLE
 APITBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP ROUTING
 TABLE
 APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
 CHARACTERISTIC TABLE.
 AUTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY
 CHECK TABLE.
 GRDTBL - TABLE MANAGEMENT FUNCTIONS FOR THE GUARANTEED
 DELIVERY TABLE.

USED IN MAIN PROGRAM(S):

 AUTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AUTHORITY
 CHECK TABLE.

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INCHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: RMVAST
PURPOSE: REMOVE ASTERIKS FROM MESSAGE HEADER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RMVAST
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF SOURCE OF MESSAGE IS OFF-HOST THEN
LOOK AT EACH CHARACTER IN THE MESSAGE
AND REMOVE ANY ASTERISKS.

ARGUMENTS:

AP-CLUSTER-STATUS-TABLE = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APCBUF - APC RECORD BUFFER.
INIDAT - FORMAT FOR INITIAL APC DATA.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

APCTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER
STATUS TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

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CALLED DIRECTLY BY:

MNGMSG - MANAGE MESSAGE.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: RMVPR
PURPOSE: SEARCH FOR MATCH IN MESSAGE PAIR TABLE
THEN REMOVE IT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RMVPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- LOOK FOR MATCH IN PAIR TABLE BY
MATCHING THE MSG DEST TO THE SRC FIELD IN THE TABLE
AND THE MSG CHAN TO THE TABLE CHAN. IF THAT
DOES NOT WORK THEN MATCH THE ORIG SRC TO THE
SRC IN THE TABLE AND MATCH THE CHANNEL NUMBERS

ARGUMENTS:

MSG-PAIR-TABLE = RECRD
NTM-MESSAGE = RECRD
RETURNCODE =
IDATA = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
MPRBUF - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

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MPRTBL - TABLE MANAGEMENT FUNCTION FOR THE MESSAGE PAIR
 TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

DLVMSG - DELIVER MESSAGE TO THE AP.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: RTESND
PURPOSE: ROUTE AND SEND A MESSAGE.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: RTESND
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- MSGS TO ON THE APC ARE PROCESSED BY A
SUBROUTINE CALL TO MNGPRC (MANAGE PROCESS).
MSGS TO OF APC ARE ROUTED TO THE DESTINATION
APC. MSGS TO OFF-HOST ARE ROUTED TO THE COMM
APC. THE MESSAGES TO OFF-HOST OR OFF-APC ARE
PROCESSED ACCORDING TO THE STATUS OF THAT APC
(OFFCLQ).

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

CANDEF	- DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG	- CANNED FORMAT FOR MESSAGE.
APCBUF	- APC RECORD BUFFER.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.

NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

MNGPRC	- MANAGE PROCESS.
APCTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CLUSTER STATUS TABLE.
OFFCLQ	- HANDLE MESSAGES FOR OFF CLUSTER.
DLVMSG	- DELIVER MESSAGE TO THE AP.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDKAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

PRINPT	- PROCESS CLUSTER INPUT.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: SAVEQS
PURPOSE: SAVE QUEUES - STUBBED OUT.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: PROGRAM
SOURCE FILE: SAVEQS
SOURCE FILE TYPE: .GOB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

CALLED DIRECTLY BY:

TRMAPC - TERMINATE THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: SDKIDS
PURPOSE: SEND SHUTDOWN MESSAGES TO CHILD APS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SDKIDS
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMPU

DESCRIPTION:

SEND MESSAGES TO
SHUTDOWN CHILDREN OF AP'S RESIDING ON
AN APC THAT IS SHUTTING DOWN

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
CHKSTS - CHECK STATUS
SDKIDM - SHUTDOWN MESSAGE.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
CLDBUF - CHILD TABLE RECORD BUFFER..
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

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CLDTBL - TABLE MANAGEMENT FUNCTIONS FOR THE CHILD TABLE.
VIAOWN - SEND MESSAGE VIA OWN APC INPUT MAILBOX.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SNDGAN - SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

SHTAPC - SHUTDOWN THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: SDMODE
PURPOSE: SHUTDOWN MODE PROCESSING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SDMODE
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF MSG IS BLANK AND APDEADFLAG SIGNALS THAT
ALL APS ARE DEAD, THEN APCFLG IS SET TO 0 (GO DOWN); ELSE
IF MSG IS NOT BLANK, IT WILL BE PROCESSED ACCORDINGLY:

IF MSG IS A SYSTEM COMMAND OR AN APSTATUS MSG,
IT WILL BE PROCESSED NORMALLY THRU NTM

IF MSG IS A GD MSG, IT WILL BE LOGGED AND THEN
IGNORED.

ALL OTHER MSGS ARE WRITTEN TO ERRORLOG AND
IGNORED.

ARGUMENTS:

AP-OP-INFO-TABLE = RECRD
AP-STATUS-TABLE = RECRD
SDFLG = DSPLY [X]
NTM-MESSAGE = RECRD
IDATA = RECRD
AP-DEAD-FLG =
APCFLG =
ERRCODE =

INCLUDE FILES:

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TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
INIDAT - FORMAT FOR INITIAL APC DATA.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
TBLAPO - AP OPERATING INFORMATION TABLE IS MPU LOCAL;
 OVERFLOW SHARED.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

ALDEAD - CHECK IF ALL APS ON APC ARE DEAD

CALLED DIRECTLY BY:

PRINTP - PROCESS CLUSTER INPUT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: SDPEND
PURPOSE: PROCESS SHUT DOWN PENDING MSG ON UI APC.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SDPEND
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- THE SHUTDOWN PENDING MESSAGE IS SENT
TO EACH UI AP SO THAT THE AP MAY INFORM
THE USER HOW MUCH LONGER TO SHUTDOWN.
THIS MESSAGE SHOULD ONLY BE SENT TO THE
UI AP CLUSTER FROM THE MONITR AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
INIDAT	- FORMAT FOR INITIAL APC DATA.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.

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TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.

ROUTINES CALLED:

APSTBL - TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
DLVMSG - DELIVER MESSAGE TO THE AP.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

SYSCOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: SENDAP
PURPOSE: HANDLE MESSAGES FOR APS ON CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SENDAP
SOURCE FILE TYPE: .COB
HOST: VAX
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- PROCESS MESSAGES FOR APS ON-APC

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

FILERR - THE NTM QUEUE ERROR FILE.
APTBUF - AP CHAR TABLE RECORD BUFFER.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVMBX - AP MAILBOX NAME.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SACANM - SOURCE ACK MESSAGE.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
GDARGS - GUARANTEED DELIVERY ARGS.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL

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TABLE.

TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
NTMSG	- LAYOUT OF NTM MESSAGE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.

ROUTINES CALLED:

SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
IATTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE I'M ALIVE TABLE.
APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
WRITPR	- WRITE PROCESS.
GDMSG	- GUARANTEED DELIVERY MESSAGE HANDLER.

CALLED DIRECTLY BY:

APDEAD	- PROCESS AP DYING MESSAGE
DLVMSG	- DELIVER MESSAGE TO THE AP.
IMALIV	- PROCESS I'M ALIVE MESSAGE.
INITAP	- INITIATE THE APPLICATION PROCESS.
TIMCHK	- TIME CHECKER.

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: SFTSD
PURPOSE: SEND SOFT SHUT DOWN MESSAGE TO AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SFTSD
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND "SD" TO THE AP SO THAT IT WILL
SHUT ITSELF DOWN.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
APTBUF	- AP CHAR TABLE RECORD BUFFER.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVEVB	- EVENT BLOCK DEFINITIONS FOR DELIVERING A MESSAGE.
DLVMBX	- AP MAILBOX NAME.
SFTSDM	- SOFT SHUTDOWN MESSAGE.
CHKSTS	- CHECK STATUS
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
MBXCHE	- MAILBOX CHECK.

ROUTINES CALLED:

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SNDMSG
APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
 CHARACTERISTIC TABLE.
SNDMON
RELEV - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

SHTAPC - SHUTDOWN THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: SHTAPC
PURPOSE: SHUTDOWN THE AP CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SHTAPC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- THERE ARE 3 TYPES OF SHUTDOWN THAT CAUSE AN APC TO SHUTDOWN --- APC SD, IISS SD AND HOST SD. IN ALL CASES, EACH AP IN THE CLUSTER IS SD ACCORDING TO ITS CHARACTERISTIC SHUTDOWN PROCEDURE--- ABORTED OR SENT A SOFT SD MSG. FOR EACH AP SD ON THE APC, ITS PARENT'S APC STATUS IS CHECKED. IF THE PARENT'S APC IS NOT IN A SD MODE, A CHILD STATUS MSG IS SENT TO THE PARENT'S MPU INFORMING THAT THE CHILD WAS SHUTDOWN. IF THE PARENT'S APC IS IN A SD MODE, THEN THE CHILD'S WILL PERFORM ITS OWN CLEANUP (WITHOUT CLEANUP MSG FROM PARENT'S MPU) AND SD MSGS WILL ALSO BE SENT TO THE AP'S OWN CHILDREN.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CANDEF - DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
CANMSG - CANNED FORMAT FOR MESSAGE.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
TBLDEF - INPUT FOR TABLE ROUTINES.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.

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APOBUF	- AP OPERATING INFO RECORD.
APSBUF	- THE AP STATUS TABLE APC GLOBAL.
APTBUF	- AP CHAR TABLE RECORD BUFFER.
NTMMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.

ROUTINES CALLED:

APSTBL	- TABLE MANAGEMENT FUNCTIONS AP STATUS TABLE.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
SFTSD	- SEND SOFT SHUT DOWN MESSAGE TO AP.
DELPRC	- DELETE PROCESSES ON THE VAX.
SDKIDS	- SEND SHUTDOWN MESSAGES TO CHILD APS.
APOTBL	- TABLE MANAGEMENT FUNCTION FOR THE AP OPERATING TABLE.
SNDCAN	- SEND CANNED MESSAGE TO AP.

CALLED DIRECTLY BY:

SYSKOM	- PROCESS SYSTEM COMMANDS.
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USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

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NTM/MPU Module Documentation

NAME: SHUTAP
PURPOSE: PROCESS SHUTDOWN AP MSG - STUBBED OUT
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SHUTAP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

NTMMSG - LAYOUT OF NTM MESSAGE.

CALLED DIRECTLY BY:

SYSKOM - PROCESS SYSTEM COMMANDS.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: SNDKAN
PURPOSE: SEND CANNED MESSAGE TO AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDKAN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CREATE A MSG FROM A CANNED HEADER AND
SEND TO ON-CLUSTER AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
APTBUF - AP CHAR TABLE RECORD BUFFER.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
DLVMBX - AP MAILBOX NAME.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
CANMSG - CANNED FORMAT FOR MESSAGE.
MBXCHE - MAILBOX CHECK.

ROUTINES CALLED:

GENSER - GENERATE MESSAGE SERIAL NUMBER.
SNDMSG
DLVQUE - QUEUE MESSAGES TO ON APC AP'S IN DELIVER
MESSAGE.
APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
CHARACTERISTIC TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEV

CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE
CHDPRC - CHILD TABLE PROCESSING.
CHDSTM - PROCESS CHILD STATUS MESSAGE.
CLDCHK - CHECK CHILD TABLE FOR RESERVED ENTRIES.
CLNUP - CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
DELCLD - DELETE CHILD ENTRY FROM CHILD TABLE.
DLVMSG - DELIVER MESSAGE TO THE AP.
GDMSGG - GUARANTEED DELIVERY MESSAGE HANDLER.
IATCHK - AGE I'M ALIVE TABLE ENTRIES.
IMALIV - PROCESS I'M ALIVE MESSAGE.
KIDST - CHECK IF ALL CHILD APS ARE DEAD.
OFFCLQ - HANDLE MESSAGES FOR OFF CLUSTER.
PFINIT - PERFORM AP INITIATION.
PRINIT - PROCESS AP INITIATION MESSAGE.
RTESND - ROUTE AND SEND A MESSAGE.
SDKIDS - SEND SHUTDOWN MESSAGES TO CHILD APS.
SHTAPC - SHUTDOWN THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: SNDCLN
PURPOSE: SEND CLEANUP MESSAGE TO CHILD AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDCLN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND CHILD STAT MSG TO PARENT AP.

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

CLNUPM - CLEANUP MESSAGE FORMAT.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
CHKSTS - CHECK STATUS
MBXNME - APC INPUT MAILBOX NAME FORMAT.
DLVMBX - AP MAILBOX NAME.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
NTMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMSG
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

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RELEVB

CALLED DIRECTLY BY:

CHDSTM - PROCESS CHILD STATUS MESSAGE.

USED IN MAIN PROGRAM(S):

INICLK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: SNDCSM
PURPOSE: SEND CHILD STATUS MESSAGE TO PARENT AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDCSM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND CHILD STAT MSG TO PARENT AP.

ARGUMENTS:

APS-BUF = RECRD

INCLUDE FILES:

CHDSTM - 28 JAN 84 : CHANGES FOR LONGER AP NAME
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
CHKSTS - CHECK STATUS
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMSG
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEV8

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CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE
CHDSTM - PROCESS CHILD STATUS MESSAGE.
PFINIT - PERFORM AP INITIATION.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: SNDMON
PURPOSE: SEND MONITOR A STATUS MESSAGE VIA ITS APC.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDMON
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND A MESSAGE TO MONITOR VIA ITS
APC USING A CANNED HEADER.

ARGUMENTS:

SEND-MON-DAT = RECRD
IDATA = RECRD

INCLUDE FILES:

CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
SMCANH - CANNED FORMAT FOR MESSAGE SENT OUT IN SNDMON.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
INIDAT - FORMAT FOR INITIAL APC DATA.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

GENSER - GENERATE MESSAGE SERIAL NUMBER.
SNDMSG
RELEV

ERRPRO

CALLED DIRECTLY BY:

ADDP	- ADD ENTRY TO MESSAGE PAIR TABLE.
ALDEAD	- CHECK IF ALL APS ON APC ARE DEAD
APDEAD	- PROCESS AP DYING MESSAGE
CHDPRC	- CHILD TABLE PROCESSING.
CHDSTM	- PROCESS CHILD STATUS MESSAGE.
CLDCHK	- CHECK CHILD TABLE FOR RESERVED ENTRIES.
CLNUP	- CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
CMPHDR	- COMPLETE MESSAGE HEADER.
CNCLSD	- PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
DELCLD	- DELETE CHILD ENTRY FROM CHILD TABLE.
DETCOM	- DETERMINE CORRECT COMM AP.
DLVMSG	- DELIVER MESSAGE TO THE AP.
FSTART	- FINAL START-UP PROCEDURE.
GDMSG	- GUARANTEED DELIVERY MESSAGE HANDLER.
IATCHK	- AGE I'M ALIVE TABLE ENTRIES
IMALIV	- PROCESS I'M ALIVE MESSAGE.
INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
INITAK	- BUILD AND SEND AN UNSOLICITED INITIATION ACCEPT MESSAGE.
INITAP	- INITIATE THE APPLICATION PROCESS.
INITST	- INITIAL START-UP PROCEDURE.
LGMSG	- SEND A MESSAGE TO LOGTASK BASED ON LOGGING SELECTION.
LISTPR	- SEND LIST OF ACTIVE AP'S ON THIS APC TO THE MONITOR AP.
MPUINF	- SUPPLY MPU INFORMATION TO MESSAGE HEADER.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
OFFCLQ	- HANDLE MESSAGES FOR OFF CLUSTER.
PAIRCK	- CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
PFINIT	- PERFORM AP INITIATION.
POAUT	- CHECK IF AUTH RESTRICTION ON THE DEST AP.
PRCONC	- PROCESS MESSAGES FROM ON THE CLUSTER.
PRINIT	- PROCESS AP INITIATION MESSAGE.
PRINPT	- PROCESS CLUSTER INPUT.
QWTINI	- WRITE INIT MESSAGES THAT CANNOT BE HANDLED NOW TO A WAIT QUEUE
RMVAST	- REMOVE ASTERIKS FROM MESSAGE HEADER.
RMVPR	- SEARCH FOR MATCH IN MESSAGE PAIR TABLE THEN REMOVE IT.
RTESND	- ROUTE AND SEND A MESSAGE.

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SDKIDS	- SEND SHUTDOWN MESSAGES TO CHILD APS.
SDPEND	- PROCESS SHUT DOWN PENDING MSG ON UI APC.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
SFTSD	- SEND SOFT SHUT DOWN MESSAGE TO AP.
SHTAPC	- SHUTDOWN THE AP CLUSTER.
SNDKAN	- SEND CANNED MESSAGE TO AP.
SNDCLN	- SEND CLEANUP MESSAGE TO CHILD AP.
SNDSCM	- SEND CHILD STATUS MESSAGE TO PARENT AP.
SNDSAP	- SEND MESSAGE TO SOURCE AP.
SNDSTE	- SEND SYSTEM STATE MESSAGE TO ALIVE AP.
STRAPC	- START UP THE AP CLUSTER.
TABPRC	- PROCESS TABLE STATUS MESSAGE FROM MONITOR.
TRMAPC	- TERMINATE THE AP CLUSTER.
VIAOWN	- SEND MESSAGE VIA OWN APC INPUT MAILBOX.
VMSGCT	- VERIFY MESSAGE CATEGORY.
VYOFFC	- VERIFY MESSAGES FROM OFF THE CLUSTER.
WRITPR	- WRITE PROCESS.
WTINIT	- CHECK WAIT-FOR-INIT QUEUE FOR INIT MESSAGES FOR A GIVEN AP.

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

NTM/MPU Module Documentation

NAME: SNDMTR
PURPOSE: SEND LOCAL MONITOR A STATUS MESSAGE
DIRECTLY WITH LOGGING.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDMTR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND A MESSAGE TO THE LOCAL MONITOR
DIRECTLY WITH MESSAGE LOGGING USING A CANNED HEADER.

ARGUMENTS:

SEND-MON-DAT = RECRD
LOG-SELECT-STR = RECRD
IDATA = RECRD

INCLUDE FILES:

CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
SMCANM - CANNED FORMAT FOR MESSAGE SENT OUT IN SNDMON.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
DLVMBX - AP MAILBOX NAME.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
INIDAT - FORMAT FOR INITIAL APC DATA.
ERRPRO - PROCESS ERROR INCLUDE FILE

ROUTINES CALLED:

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GENSER - GENERATE MESSAGE SERIAL NUMBER.
LGMESG - SEND A MESSAGE TO LOGTASK BASED ON LOGGING
SELECTION.
SNDMSG
DLVQUE - QUEUE MESSAGES TO ON APC AP'S IN DELIVER
MESSAGE.
RELEVB
ERRPRO

CALLED DIRECTLY BY:

ADDP - ADD ENTRY TO MESSAGE PAIR TABLE.
FSTART - FINAL START-UP PROCEDURE.
INITST - INITIAL START-UP PROCEDURE.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.
PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.
STRAPC - START UP THE AP CLUSTER.
TABPRC - PROCESS TABLE STATUS MESSAGE FROM MONITOR.
TRMAPC - TERMINATE THE AP CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: SNDSAP
PURPOSE: SEND MESSAGE TO SOURCE AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDSAP
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CREATE A MSG FROM A CANNED HEADER AND
SEND TO ON-CLUSTER AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

APTBUF	- AP CHAR TABLE RECORD BUFFER.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
SACANM	- SOURCE ACK MESSAGE.
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
CHKSTS	- CHECK STATUS
DLVEVB	- EVENT BLOCK DEFINITIONS FOR DELIVERING A MESSAGE.
DLVMBX	- AP MAILBOX NAME.
NTMMSG	- LAYOUT OF NTM MESSAGE.
MBXNME	- APC INPUT MAILBOX NAME FORMAT.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
MBXCHE	- MAILBOX CHECK.

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ROUTINES CALLED:

GENSER - GENERATE MESSAGE SERIAL NUMBER.
SNDMSG
DLVQUE - QUEUE MESSAGES TO ON APC AP'S IN DELIVER
MESSAGE.
APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
CHARACTERISTIC TABLE.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEVB

CALLED DIRECTLY BY:

ADDPR - ADD ENTRY TO MESSAGE PAIR TABLE.
CHDPRC - CHILD TABLE PROCESSING.
CMPHDR - COMPLETE MESSAGE HEADER.
IMALIV - PROCESS I'M ALIVE MESSAGE.
MPUINF - SUPPLY MPU INFORMATION TO MESSAGE HEADER.
POSAUT - CHECK IF AUTH RESTRICTION ON THE DEST AP.
PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.
PRINIT - PROCESS AP INITIATION MESSAGE.
SNDSTE - SEND SYSTEM STATE MESSAGE TO ALIVE AP.
VMSGCT - VERIFY MESSAGE CATEGORY.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

NTM/MPU Module Documentation

NAME: SNDSTE
PURPOSE: SEND SYSTEM STATE MESSAGE TO ALIVE AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SNDSTE
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- SEND A SYSTEM STATE MESSAGE TO THE NEW
INSTANCE OF THE AP
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ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
SSTEMG - SYSTEM STATE MESSAGE.
SYSTAT - SYSTEM STATUS CODE DEFINITIONS.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
APTBUF - AP CHAR TABLE RECORD BUFFER.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
DLVMBX - AP MAILBOX NAME.
CHKSTS - CHECK STATUS
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.
MBXCHE - MAILBOX CHECK.

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ROUTINES CALLED:

APTTBL - TABLE MANAGEMENT FUNCTIONS FOR THE AP
 CHARACTERISTIC TABLE.
SNDMSG
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
SND SAP - SEND MESSAGE TO SOURCE AP.
RELEVB

CALLED DIRECTLY BY:

IMALIV - PROCESS I'M ALIVE MESSAGE.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: STRAPC
PURPOSE: START UP THE AP CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: STRAPC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- STRAPC STARTS UP THE CLUSTER BY CALLING 'INITST' TO DO THE INITIAL START UP PROCESSES SUCH AS CREATING MBXS, ETC... STRAPC THEN SENDS A MESSAGE TO THE MONITR AP REQUESTING THE TABLE STATUS AND CALLS 'TABPRC' TO WAIT FOR THE MONITR'S RESPONSE AND PROCESS IT. IF ALL IS SUCCESSFUL THEN 'STRAPC' SENDS AN 'APC ALIVE' MESSAGE TO THE MONITR AP AND CALLS 'FSTART' TO WAIT FOR (AND PROCESS) THE FINAL START UP INSTRUCTIONS FROM THE MONITR AP. IF AN ERROR OCCURS, AN 'UNSUCCESSFUL START-UP' CODE IS RETURNED TO THE CALLING AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

MBXNME	- APC INPUT MAILBOX NAME FORMAT.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
GDARGS	- GUARANTEED DELIVERY ARGS.
INIDAT	- FORMAT FOR INITIAL APC DATA.
LOGSEL	- STRUCTURE FOR SELECTIVE LOGGING INFORMATION..

KEPT IN GLOBAL.

TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLACT	- AUTHORITY CHECK TABLE.
TBLAUT	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN M'U-LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
NTMSG	- LAYOUT OF NTM MESSAGE.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
INPEVB	- MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR THE APC HOT

ROUTINES CALLED:

INITST	- INITIAL START-UP PROCEDURE.
SNDMTR	- SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
TABPRC	- PROCESS TABLE STATUS MESSAGE FROM MONITOR.
FSTART	- FINAL START-UP PROCEDURE.
GDMSG	- GUARANTEED DELIVERY MESSAGE HANDLER.

CALLED DIRECTLY BY:

EXCMPU	- EXECUTE MESSAGE PROCESSING UNIT.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: SUPDEF
PURPOSE: SUPPLY SYSTEM DEFAULTS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SUPDEF
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF DEFAULTS VALUES ARE NEEDED TO
COMPLETE A MESSAGE HEADER FROM AN AP,
THEN THE NTM WILL SUPPLY THEM.

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

NTMSG - LAYOUT OF NTM MESSAGE.

CALLED DIRECTLY BY:

CMPHDR - COMPLETE MESSAGE HEADER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: SYSCOM
PURPOSE: PROCESS SYSTEM COMMANDS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: SYSCOM
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- ACCORDING TO MSG TYPE, ROUTINES ARE
CALLED TO PROCESS THE CURRENT MESSAGE.

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

GDARGS	- GUARANTEED DELIVERY ARGS.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
INIDAT	- FORMAT FOR INITIAL APC DATA.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE.... A HOST GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.

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TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
NTMMSG - LAYOUT OF NTM MESSAGE.
APDFLG - INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.

ROUTINES CALLED:

SHUTAP - PROCESS SHUTDOWN AP MSG - STUBBED OUT.
SHTAPC - SHUTDOWN THE AP CLUSTER.
INITAP - INITIATE THE APPLICATION PROCESS.
CLNHSD - PROCESS REMOTE HOST SHUTTING DOWN MSG - STUBBED
OUT
LISTPR - SEND LIST OF ACTIVE AP'S ON THIS APC TO THE
MONITOR AP.
CLNUP - CLEAN UP THE AP STATUS ENTRY AND CHILD TABLE.
ABORT - PROCESS MESSAGE TYPE AB - ABORT APPLICATION
SDPEND - PROCESS SHUT DOWN PENDING MSG ON UI APC.
CNCLSD - PROCESS CANCEL SHUT DOWN MESSAGE ON UI APC.
HSTNRQ - HOST NAME REQUEST PROCESSING.
GDMSG - GUARANTEED DELIVERY MESSAGE HANDLER.

CALLED DIRECTLY BY:

MNGPRC - MANAGE PROCESS.

USED IN MAIN PROGRAM(S):

INCHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: TABPRC
PURPOSE: PROCESS TABLE STATUS MESSAGE FROM MONITOR.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TABPRC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- READ/WAIT ON MONITOR'S MESSAGE AND PROCESS
THAT MSG IF IT ARRIVES. THE MSG WILL REVEAL THE STATUS OF
THE TABLES AND THE MPU WILL EITHER BUILD THE TABLES FROM
A LOCAL FILE (IF OK) OR REQUEST NEW TABLES FROM CDM.
IF MTR'S MSG DOES NOT ARRIVE, THE RETCODE WILL BE SET
TO 1.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

WAITDE	-	DEBUG MSG FILE BUFFER.
SDMNDT	-	MPU TO MONITOR ERROR MESSAGE FORMAT.
STEB	-	START UP DEFINITIONS.
NTMMSG	-	LAYOUT OF NTM MESSAGE.
SYSERR	-	SYSTEM ERROR CODE DEFINITIONS.
POPTAB	-	INIT TABLES.
TBLAPT	-	THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
LOGSEL	-	STRUCTURE FOR SELECTIVE LOGGING INFORMATION.. KEPT IN GLOBAL.
TBLAPI	-	THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.

TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLACT	- AUTHORITY CHECK TABLE.
TBLAUT	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
INPEVB	- MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR THE APC HOT
INIDAT	- FORMAT FOR INITIAL APC DATA.
MBXNME	- APC INPUT MAILBOX NAME FORMAT.
WAITON	- WAIT ON A MSG.

ROUTINES CALLED:

RCVMSG	
SETTIM	
WAITO2	
CNLTIM	
GETMSG	
CDMFIL	- REQUEST NEW TABLE FROM CDM.
APTINI	- INITIALIZE THE AP CHARACTERISTICS TABLE.
APIINI	- INITIALIZE THE AP INFORMATION TABLE.
APOINI	- INITIALIZE AP OPERATING TABLE.
ACTINI	- LOAD THE AUTHORITY CHECK TABLE FROM THE AUTHORITY CHECK FILE.
CLDINI	- INITIALIZE CHILD TABLE.
IATINI	- INITIALIZE THE I'M ALIVE TABLE.
MPRINI	- INITILIAZE THE MESSAGE PAIR TABLE.
APSINI	- INITIALIZE THE AP STATUS TABLE.
SNDMTR	- SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY WITH LOGGING.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

STRAPC	- START UP THE AP CLUSTER.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
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POINT.

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NTM/MPU Module Documentation

NAME: TIMCHK
PURPOSE: TIME CHECKER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TIMCHK
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- THIS ROUTINE IS INVOKED PERIODICALLY
ON A TIMER TO CHECK SPECIFIC CONDITIONS
AND STATUSES OF CERTAIN FILES. ALSO,
THIS ROUTINE TRIES TO CLEANUP (SEND OUT
THE MESSAGES IN) QUEUES.

ARGUMENTS:

AP-OP-INFO-TABLE = RECRD

INCLUDE FILES:

APCBUF - APC RECORD BUFFER.
APSBUF - THE AP STATUS TABLE APC GLOBAL.
TBLAPS - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLAPC - THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.
TBLMPR - MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TBLGD - THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
TBLIAT - IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLCLD - THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
INIDAT - FORMAT FOR INITIAL APC DATA.

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TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
NTMSG	- LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

PAIRCK	- CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
IATCHK	- AGE I'M ALIVE TABLE ENTRIES.
CLDCHK	- CHECK CHILD TABLE FOR RESERVED ENTRIES.
SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
OFFCLQ	- HANDLE MESSAGES FOR OFF CLUSTER.

CALLED DIRECTLY BY:

PRINPT	- PROCESS CLUSTER INPUT.
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USED IN MAIN PROGRAM(S):

MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.
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NTM/MPU Module Documentation

NAME: TRMAPC
PURPOSE: TERMINATE THE AP CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: TRMAPC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- BEFORE SHUTTING DOWN THE APC, TRMAPC
WRITES ALL THE QUEUES TO A FILE. THE LAST USED SERIAL #
IS WRITTEN TO THE FILE INI.DAT WHERE IT WILL BE OBTAINED
AT THE NEXT START UP. ALL SYSTEM FILES AND LOGS ARE
CLOSED AND THE APC MBXS ARE DISCONNECTED. FINALLY, AN
'APC TERMINATE' MSG IS SENT TO MTR AP AND THE MPU ENDS
EXECUTION.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

CHKSTS - CHECK STATUS
STEBB - START UP DEFINITIONS.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
LOGSEL - STRUCTURE FOR SELECTIVE LOGGING INFORMATION..
KEPT IN GLOBAL.
SDDEF - INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
INPEVB - MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR
THE APC HOT

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INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SAVEQS - SAVE QUEUES - STUBBED OUT.
SNDMTR - SEND LOCAL MONITOR A STATUS MESSAGE DIRECTLY
WITH LOGGING.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
DELMBX

CALLED DIRECTLY BY:

EXCMPU - EXECUTE MESSAGE PROCESSING UNIT.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
POINT.

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NTM/MPU Module Documentation

NAME: VIAOWN
PURPOSE: SEND MESSAGE VIA OWN APC INPUT MAILBOX.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: VIAOWN
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- CREATE A MSG FROM A CANNED HEADER AND
SEND TO ON-CLUSTER AP.

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
CHKSTS - CHECK STATUS
DLVEVB - EVENT BLOCK DEFINITIONS FOR DELIVERING A
MESSAGE.
MBXNME - APC INPUT MAILBOX NAME FORMAT.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

SNDMSG
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEV

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CALLED DIRECTLY BY:

HSTNRQ - HOST NAME REQUEST PROCESSING.
IATCHK - AGE I'M ALIVE TABLE ENTRIES.
INITAP - INITIATE THE APPLICATION PROCESS.
LISTPR - SEND LIST OF ACTIVE AP'S ON THIS APC TO THE
 MONITOR AP.
PAIRCK - CHECK MESSAGE PAIR TABLE FOR TIMED OUT MESSAGES.
SDKIDS - SEND SHUTDOWN MESSAGES TO CHILD APS.
WRITPR - WRITE PROCESS.

USED IN MAIN PROGRAM(S):

INICHK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE
 FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

NTM/MPU Module Documentation

NAME: VMSGCT
PURPOSE: VERIFY MESSAGE CATEGORY.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: VMSGCT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- LOOK UP THE MESSAGE CATEGORY IN THE
MESSAGE CATEGORY TABLE TO VERIFY THAT IT
IS A LEGAL CATEGORY. IF IT IS NOT FOUND
THEN AN 'INVALID MSG CAT' MESSAGE IS SENT
TO THE SOURCE AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

TABDEF - INPUT DEFINITIONS FOR TABLE ROUTINES.
SDSPDT - MPU TO AP ERROR MESSAGE FORMAT.
SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
TEBLAPT - THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.
TELCAT - FORMAT FOR INITIAL APC DATA.
INIDAT - FORMAT FOR INITIAL APC DATA.
NTMMSG - LAYOUT OF NTM MESSAGE.

ROUTINES CALLED:

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CATTBL - TABLE MANAGEMENT FUNCTIONS FOR THE MESSAGE
 CATEGORY TABLE.
SNDSAP - SEND MESSAGE TO SOURCE AP.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

PRCONC - PROCESS MESSAGES FROM ON THE CLUSTER.

USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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NTM/MPU Module Documentation

NAME: VYOFFC
PURPOSE: VERIFY MESSAGES FROM OFF THE CLUSTER.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: VYOFFC
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- MSG DESTINATION IS CHECKED TO BE EQUAL
TO THE APCNAME IN ORDER TO VERIFY THAT THE
MSG ARRIVED AT THE CORRECT DESTINATION APC.

ARGUMENTS:

NTM-MESSAGE = RECRD

INCLUDE FILES:

SDMNDT - MPU TO MONITOR ERROR MESSAGE FORMAT.
SYSERR - SYSTEM ERROR CODE DEFINITIONS.
NTMMSG - LAYOUT OF NTM MESSAGE.
INIDAT - FORMAT FOR INITIAL APC DATA.

ROUTINES CALLED:

SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

MNGMSG - MANAGE MESSAGE.

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USED IN MAIN PROGRAM(S):

MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT
 POINT.

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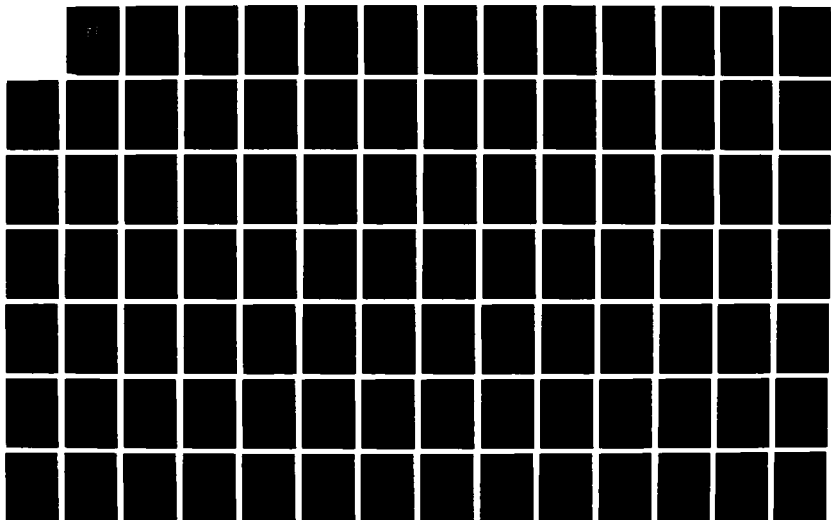
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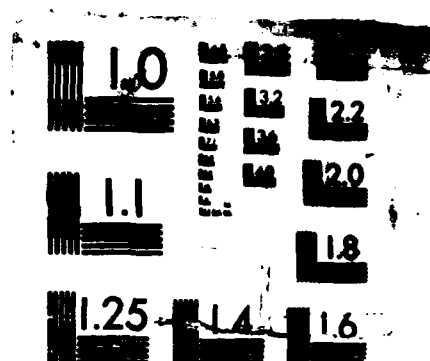
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MICROCOPY RESOLUTION TEST CHART

NTM/MPU Module Documentation

NAME: WRITPR
PURPOSE: WRITE PROCESS.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: WRITPR
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- IF THE APC IS "COMM" OR THE MSG PRIORITY IS 0, THEN THE MSG IS WRITTEN TO THE AP'S COLD MBX OTHERWISE IT IS WRITTEN TO THE AP'S HOT MB. IF THE MBX IS NOT FOUND THEN THE AP'S MNX CHARS ARE CHECKED TO SEE WHAT MBXS SHOULD EXIST FOR THE AP. IF THE MBX IS SUPPOSED TO EXIST AND DOES NOT, A PROCESSING ERROR IS SENT TO THE OPERATOR VIA MTR AP. IF THE MBX IS NOT SUPPOSED TO EXIST THEN A 'MSG ERROR' MSG IS SENT TO THE SRC AP.

ARGUMENTS:

AP-CHAR-TABLE = RECRD

INCLUDE FILES:

APTBUF	- AP CHAR TABLE RECORD BUFFER.
SDSPDT	- MPU TO AP ERROR MESSAGE FORMAT.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
CHKSTS	- CHECK STATUS
TABDEF	- INPUT DEFINITIONS FOR TABLE ROUTINES.
SACANM	- SOURCE ACK MESSAGE.
DLVEVB	- EVENT BLOCK DEFINITIONS FOR DELIVERING A MESSAGE.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
DLVMBX	- AP MAILBOX NAME.

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NTMSG	- LAYOUT OF NTM MESSAGE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
INIDAT	- FORMAT FOR INITIAL APC DATA.
WRTMSG	- SEND MESSAGE TO MAILBOX.
MBXCHE	- MAILBOX CHECK.

ROUTINES CALLED:

SNDMSG	
APTTBL	- TABLE MANAGEMENT FUNCTIONS FOR THE AP CHARACTERISTIC TABLE.
VIAOWN	- SEND MESSAGE VIA OWN APC INPUT MAILBOX.
SNDMON	- SEND MONITOR A STATUS MESSAGE VIA ITS APC.
RELEVB	

CALLED DIRECTLY BY:

SENDAP	- HANDLE MESSAGES FOR APS ON CLUSTER.
--------	---------------------------------------

USED IN MAIN PROGRAM(S):

INICHK	- CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI	- MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

NTM/MPU Module Documentation

NAME: WTINIT
PURPOSE: CHECK WAIT-FOR-INIT QUEUE FOR INIT
MESSAGES FOR A GIVEN AP.
LANGUAGE: VAX-11 COBOL
MODULE TYPE: SUBROUTINE
SOURCE FILE: WTINIT
SOURCE FILE TYPE: .COB
HOST:
SUBSYSTEM: NTM
SUBDIRECTORY: MPU
DOCUMENTATION GROUP: NTMMPU

DESCRIPTION:

- LOOK IN WAIT-INIT QUEUE FOR AN
INIT MSG FOR THE DYING (SPECIFIED) AP.
IF A MESSAGE IS FOUND, THEN CALL
'PFINIT' TO PERFORM THE INIT.
PDATED JUN 9

ARGUMENTS:

DIRECTORY-TABLE = RECRD

INCLUDE FILES:

WTINIQ	- WAIT INIT QUEUE ASSIGNMENTS.
WTIQFD	- WAIT INIT QUEUE FILE DEFINITIONS.
NTMMSG	- LAYOUT OF NTM MESSAGE.
WTIQST	- FILE STATUS DEFINITIONS.
SYSERR	- SYSTEM ERROR CODE DEFINITIONS.
SDMNDT	- MPU TO MONITOR ERROR MESSAGE FORMAT.
TBLDIR	- THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
TBLAPT	- THIS IS THE AP CHARACTERISTIC TABLE... AN APC GLOBAL TABLE.
TBLAPC	- THIS IS THE APC STATUS TABLE... A HOST GLOBAL TABLE.
TBLAPO	- AP OPERATING INFORMATION TABLE IS MPU LOCAL; OVERFLOW SHARED.

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1 November 1985

TEBLAPS	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLIAT	- IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
TBLMPR	- MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
TBLGD	- THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL TABLE.
TBLAPI	- THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR ROUTING.
TBLCLD	- THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
SDDEF	- INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
APDFLG	- INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
INIDAT	- FORMAT FOR INITIAL APC DATA.
OPIINI	- PURPOSE NOT KNOWN.
RDWTIQ	- READ/WRITE TO QUEUE.
REWINI	- WAIT-INIT QUEUE FILE
CLQINI	- CLEAN INIT QUEUES.

ROUTINES CALLED:

PFINIT - PERFORM AP INITIATION.
SNDMON - SEND MONITOR A STATUS MESSAGE VIA ITS APC.

CALLED DIRECTLY BY:

APDEAD - PROCESS AP DYING MESSAGE

USED IN MAIN PROGRAM(S):

INICK - CHECK WAIT-FOR-INITIALIZATION QUEUE FOR MESSAGE FOR A GIVEN AP.
MPUINI - MESSAGE PROCESSING UNIT ENTRY POINT AND EXIT POINT.

PS 620142200
1 November 1985

3.10.9 Include File Descriptions

The following list contains a purpose and description of each include file listed in 3.10.4 as specified in the source code. The language it is written in is also given.

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1 November 1985

MTM/MPU Include File Description

FILE NAME: AAMSG
PURPOSE: 28 JAN 84 : CHANGES FOR LONGER AP NAME
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARAIBLES TO
SPACES OR 0, EXCEPT FOR RSTAT WHICH IS
INITIALIZED
TO "00000".

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: ACTBUF
PURPOSE: INPUT DEFINITIONS FOR TABLE ROUTINES.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARAIBLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APCBUF
PURPOSE: APC RECORD BUFFER
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

TO "00000".

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APDFLG
PURPOSE: INDICATES IF ALL APS ON AP CLUSTER ARE DEAD.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR
0, EXCEPT FOR RSTAT WHICH IS INITIALIZED
TO "00000".
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APIBUF
PURPOSE: API RECORD BUFFER
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APOBUF
PURPOSE: AP OPERATING INFO RECORD.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/20/84 FOR INDEX KEY.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APSBUF
PURPOSE: THE AP STATUS TABLE APC GLOBAL.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/23/84 TO ELIMINATE SEARCH ON INDEX AND TO FIX
THE
STRUCTURE FOR INDEXED TABLES.
MODIFIED 1/26/84 FOR MSG-CHAIN STRUCTURE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: APTBUF
PURPOSE: AP CHAR TABLE RECORD BUFFER.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/28/84 CHANGES FOR LONGER AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: BADINI
PURPOSE: CANNED UNSUCCESSFUL INIT MSG
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARAIBLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CANDEF
PURPOSE: DEFINITIONS OF DATA PORTION OF CANNED MESSAGES.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

WRITTEN 2/08/84
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARAIBLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

WTH/MPU Include File Description

FILE NAME: CANMSG
PURPOSE: CANNED FORMAT FOR MESSAGE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

WRITTEN 2/07/84 TO HANDLE ENTRY-NOT-FOUND.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CATBUF

**PURPOSE: THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.**

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CHDSTM
PURPOSE: 28 JAN 84 : CHANGES FOR LONGER AP NAME
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

26 SEP 84 : VARIABLE INITIALIZATION BCS APM *

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CHKSTS
PURPOSE: CHECK STATUS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

WTH/MPU Include File Description

FILE NAME: CLDBUF
PURPOSE: CHILD TABLE RECORD BUFFER
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CLNUPH
PURPOSE: CLEANUP MESSAGE FORMAT
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CLOSED

PURPOSE: LOGIC FOR CLOSED APC QUEUE FILE

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CLQINI
PURPOSE: CLEAN INIT QUEUE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: CRTPRD
PURPOSE: THE DIRECTORY TABLE FOR CREATE PROCESS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

WRITTEN 1/31/84 TO HANDLE THE DIRECTORY PREFIX.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 3/01/85 INCLUDE DEVICE TYPE IN TABLE; REARRANGE
POSITION OF LENGTH.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DLVEVB
PURPOSE: EVENT BLOCK DEFINITIONS FOR DELIVERING A MESSAGE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/29/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DLVMBX
PURPOSE: AP MAILBOX NAME
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DLVQFD
PURPOSE: DELIVER QUEUE FILE DEFINITION
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DLVQFI
PURPOSE: DELIVER QUEUE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DLVQST
PURPOSE: DELIVER QUEUE STATUS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: DWTQST
PURPOSE: DATA UNIT, QUEUE STATUS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: FILERR
PURPOSE: THE NTM QUEUE ERROR FILE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

CREATED 1/11/84
MODIFIED 5/31/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: GDARGS
PURPOSE: GUARANTEED DELIVERY ARGS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: GDDATA
PURPOSE: GUARANTEED DELIVERY DATA
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: HNRTMG
PURPOSE: HOST NAME RETURN MSG
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/30/84 FOR EXPANDED AP NAME *
MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: HSTGLE
PURPOSE: HOST GLOBAL SECTION END
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: IATBUF
PURPOSE: I'M ALIVE RECORD BUFFER
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/23/84 TO ELIMINATE SEARCH ON INDEX AND TO FIX
THE
STRUCTURE FOR INDEXED TABLES.
MODIFIED 1/26/84 FOR MSG-CHAIN STRUCTURE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARAIBLES TO SPACES
OR 0

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: IN
PURPOSE: AT START UP.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: INIDAT
PURPOSE: FORMAT FOR INITIAL APC DATA.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 12/23/83 TO ADD ACK FLAG.
MODIFIED 1/24/84 FOR NEW AP LENGTHS, ADDED
UIAPNAME, REWORKED
INSTANCE SPECIFIER.
MODIFIED 8/24/84 FOR VAILABLE INITS.
MODIFIED 8/24/84 ADDED ADDITIONAL IBM 88 LEVEL NAME. BCS
APH
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: INPEVB
PURPOSE: MPU'S MAIN PROCESSING EVENT BLOCKS--- ONE FOR THE
APC HOT
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MAILBOX, APC COLD MAILBOX, AND ONE FOR THE TIMER

MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/29/85 CLEAN-UP.

PS 320142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: LGMSG
PURPOSE: FORMAT OF LOGGED MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED REL 1.2 TO SUPPORT FULL NTM MSG LENGTH 07/12/84 APM

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: LOGSEL
PURPOSE: STRUCTURE FOR SELECTIVE LOGGING INFORMATION.. KEPT
IN GLOBAL.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MAINTAINED BY MONITOR, AND ACCESSED BY THE MPUS.

MODIFIED 3/22/84 TO ADD DEFINITION OF CATEGORY VALUES
DEFINE-CAT.

MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.

MODIFIED 5/29/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: MBXCHE
PURPOSE: MODIFIED 1/30/84 FOR EXPANDED AP NAME
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 3/6/84 TO RELEASE EVENT BLOCK ON MBX- *
NOT-FOUND ONLY WHERE MBX SHOULD EXIST *

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: MBXNME
PURPOSE: APC INPUT MAILBOX NAME FORMAT.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/28/84 CHANGES FOR LONGER AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/29/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: MPRBUF
PURPOSE: MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 1/25/84 FOR INDEXED STRUCTURE.
MODIFIED 2/02/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARAIBLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: NTMMSG
PURPOSE: LAYOUT OF NTM MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/28/84 CHANGES FOR LONGER AP NAME.
MODIFIED 1/30/84 FOR APNAME STRUCTURE.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: OPENDL
PURPOSE: OPEN ON-APC DELIVER QUEUE FILES.

-
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: OPIINI
PURPOSE: PURPOSE NOT KNOWN
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

02/06/85 CRRECTED SEQUENCE OF TESTS

APM *

PS 620142200
1 November 1985

MTM/MPU Include File Description

FILE NAME: OPQINI
PURPOSE: PURPOSE NOT KNOWN
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

02/06/85 ADDED LAST MOVE STATEMENT

*

PS 620142200
1 November 1985

MTM/MPU Include File Description

FILE NAME: PSSAPC
PURPOSE: APC NAME VALUES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

MODIFIED 29 AUG 84 ADDED IBM USER INTERFACE VALUE. BCS
APM

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: QMSG
PURPOSE: QUEUE MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: RDWTIQ
PURPOSE: READ/WRITE TO QUEUE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: REWINI
PURPOSE: WAIT-INIT QUEUE FILE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

ADDED SUPPORT FOR IBM APC NAMES APM *

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SACANM
PURPOSE: SOURCE ACK MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARAIBLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SDDEF
PURPOSE: INDICATES THE TYPE OF SHUTDOWN THE APC IS IN.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SDKIDM
PURPOSE: SHUTDOWN MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SDMNDT
PURPOSE: MPU TO MONITOR ERROR MESSAGE FORMAT
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SDSPDT
PURPOSE: MPU TO AP EROR MESSAGE FORMAT
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/30/84 FOR EXPANDED AP NAME.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SFTSDM
PURPOSE: SOFT SHUTDOWN MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SMCANM
PURPOSE: CANNED FORMAT FOR MESSAGE SENT OUT IN SNDMON.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/28/84 CHANGES FOR LONGER AP NAME.
MODIFIED 5/29/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SSTENG
PURPOSE: SYSTEM STATE MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

28 JAN 84 : CHANGES FOR LONGER AP NAME *

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: STEVB
PURPOSE: START UP DEFINITIONS.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARAIBLES TO SPACES
OR 0
MODIFIED 5/29/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: SYSERR
PURPOSE: SYSTEM ERROR CODE DEFINITIONS.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/09/84 TO INCLUDE ERRORS DEFINED IN RELEASE 1.1
CHANGED TO DELETE ALPHA CHARS.
MODIFIED 2/07/84 TO ADD ERROR CODES FOR ENTRY NOT-FOUND
LOGIC
MODIFIED 4/23/85 ADDED INSTANCE-UNAVAIL.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

MTM/MPU Include File Description

FILE NAME: SYSTAT
PURPOSE: SYSTEM STATUS CODE DEFINITIONS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/09/84 TO INCLUDE ERRORS DEFINED IN RELEASE 1.1
CHANGED TO DELETE ALPHA CHARS.
MODIFIED 2/07/84 TO ADD ERROR CODES FOR ENTRY NOT-FOUND
LOGIC
MODIFIED 4/23/85 ADDED INSTANCE-UNAVAIL.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TABDEF
PURPOSE: INPUT DEFINITIONS FOR TABLE ROUTINES.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OR 0

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLACT
PURPOSE: AUTHORITY CHECK TABLE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/28/84 CHANGES FOR LONGER AP NAME.
MODIFIED 1/30/84 FOR APNAME STRUCTURE.
MODIFIED 8/16/84 INITIALIZE ALL LOCAL VARIABLES TO SPACES
OF 0
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLAPC

PURPOSE: THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/23/84 INITIALIZE ALL VARAIBLES TO SPACES OR 0.

MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLAPI
PURPOSE: THE AP-INFORMATION-TABLE; APC GLOBAL; USED FOR
ROUTING.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 10/31/83 TO ADD Q-SERVER INFO TO TABLE - USED TO
IDENTIFY A Q-SERVER NOT NEEDING A CHILD
TABLE ENTRY.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLAPO

PURPOSE: AP OPERATING INFORMATION TABLE IS MPU LOCAL;
OVERFLOW SHARED.

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/20/84 TO MAKE APO A DYNAMIC INDEXED TABLE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLAPS
PURPOSE: IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 1/24/84 FOR INDEXED STRUCTURE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TELAPT

**PURPOSE: THIS IS THE AP CHARACTERISTIC TABLE... AN APC
GLOBAL TABLE.**

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/30/84 FOR EXPANDED AP NAME.

MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.

MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLAUT
PURPOSE: THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 10/31/83 TO ADD VALUES OF RESCDE AND CTries -
NEEDED
TO IMPLEMENT THE CHILD TABLE PROCESSING
TO
AVOID CHILD TABLE FULL AFTER THE CHILD AP
HAS STARTED.
MODIFIED 11/10/83 TO CHANGE LAST-ENTRY TO ACTIVE-ENTRIES.
RESTORED 11/22/83
MODIFIED 1/23/84 TO ELIMINATE SEARCH ON INDEX AND TO FIX
THE
STRUCTURE FOR INDEXED FILES.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLCAT
PURPOSE: FORMAT FOR INITIAL APC DATA.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 12/23/83 TO ADD ACK FLAG.
MODIFIED 1/24/84 FOR NEW AP LENGTHS, ADDED
UIAPNAME, REWORKED
INSTANCE SPECIFIER.
MODIFIED 8/24/84 FOR VAILABLE INITS.
MODIFIED 8/24/84 ADDED ADDTITIONAL IBM 88 LEVEL NAME. BCS
APM
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

MTM/MPU Include File Description

FILE NAME: TELCLD
PURPOSE: THE CHILD-TABLE IS AN MPU-LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 10/31/83 TO ADD VALUES OF RESCDE AND CTries -
NEEDED
TO IMPLEMENT THE CHILD TABLE PROCESSING
TO
AVOID CHILD TABLE FULL AFTER THE CHILD AP
HAS STARTED.
MODIFIED 11/10/83 TO CHANGE LAST-ENTRY TO ACTIVE-ENTRIES.
RESTORED 11/22/83
MODIFIED 1/23/84 TO ELIMINATE SEARCH ON INDEX AND TO FIX
THE
STRUCTURE FOR INDEXED FILES.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARAIBLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLDEF
PURPOSE: INPUT FOR TABLE ROUTINES
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLDIR
PURPOSE: THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

WRITTEN 1/31/84 TO HANDLE THE DIRECTORY PREFIX.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 3/01/85 INCLUDE DEVICE TYPE IN TABLE; REARRANGE
POSITION OF LENGTH.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLGD
PURPOSE: THE GUARANTEED DELIVERY TABLE IN AN APC GLOBAL
TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED REL 1.2 FOR SERIAL NO STRUCTURE.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLHST

PURPOSE: THIS IS THE APC STATUS TABLE.... A HOST GLOBAL
TABLE.

LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 8/23/84 INITIALIZE ALL VARAIBLES TO SPACES OR 0.

MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLIAT
PURPOSE: IM-ALIVE-TABLE IS AN MPU LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 1/24/84 FOR INDEXED STRUCTURE.
MODIFIED 1/30/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLIST
PURPOSE: THE DIRECTORY TABLE IS A HOST GLOBAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

WRITTEN 1/31/84 TO HANDLE THE DIRECTORY PREFIX.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 3/01/85 INCLUDE DEVICE TYPE IN TABLE; REARRANGE
POSITION OF LENGTH.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TBLMPR
PURPOSE: MESSAGE-PAIR-TABLE IS AN MPU LOCAL TABLE.
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

RESTORED 11/22/83
MODIFIED 1/25/84 FOR INDEXED STRUCTURE.
MODIFIED 2/02/84 FOR EXPANDED AP NAME.
MODIFIED 8/23/84 INITIALIZE ALL VARIABLES TO SPACES OR 0.
MODIFIED 5/25/85 CLEAN-UP.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: TOMSG
PURPOSE: TIMEOUT ERROR MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: UNINAK
PURPOSE: INITIATION ACK MESSAGE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

MODIFIED 16 AUG 84 INITIALIZE ALL LOCAL VARIABLES TO
SPACES OR 0.

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WAITDE
PURPOSE: DEBUG MSG FILE BUFFER
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WAITON
PURPOSE: WAIT ON A MSG
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

CALL RECEIVE ON MBX

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WRITED
PURPOSE: WRITE TO DELIVER MSG QUEUE
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WRTINI
PURPOSE: PURPOSE NOT KNOWN
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WRTMSG
PURPOSE: SEND A MESSAGE TO MAILBOX
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WTINIQ
PURPOSE: WAIT INIT QUEUE ASSIGNMENTS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WTIQFD
PURPOSE: WAIT INIT QUEUE FILE DEFINITIONS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

PS 620142200
1 November 1985

NTM/MPU Include File Description

FILE NAME: WTIQST
PURPOSE: FILE STATUS DEFINITIONS
LANGUAGE: VAX-11 COBOL

DESCRIPTION:

3.10.10 Hierarchy Chart

The following hierarchy charts show the relationships between all of the modules mentioned in the above documentation. A module may call a subroutine several times within its code, but the call will only be shown once as a single relationship on this hierarchy chart. All modules shown at the top of the first page are considered Main Programs as described in section 3.10.1 above.

There is an internal paging scheme as marked by the numbers in the upper right corner of each page. An index after the last page of the chart shows where a routine and its calls are first defined. If a routine has no page reference, it either makes no calls or is an external routine. A continuation box on the end of a tree limb shows where that the tree continues on the page number mentioned. A number in a box with a routine name points to the page where the routine is further defined within the hierarchy tree. If there is no number in a box, the routine either makes no calls or is an external routine.

PS 620142200
1 November 1985

1
+-----+ +-----+ +-----+ +-----+ +-----+
|APDEAD| |AUTTEL| |INICHK| |MPUGEN| |MPUINI|
+-----2+ +-----+ +-----+ +-----3+
|
|
+-----+ +-----+ +-----+ +-----+ +-----+
|RANDIN| |PFINIT| |SNDMON| |IISYS| |MTRGEN|
+-----+ +-----8+ +-----9+ +-----+ +-----+

PS 620142200
1 November 1985

2

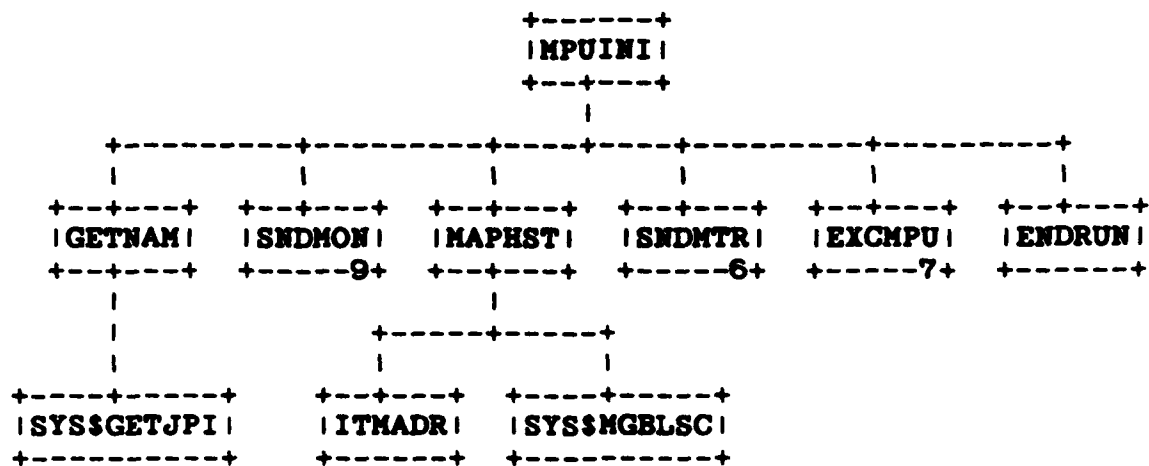
```

+-----+
| APDEAD |
+-----+
|
+-----+-----+-----+-----+-----+-----+
| | | | | | |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| APSTBL | | KIDST | | SNDCSM | | CLNUP | | APOTBL | | (CONT) |
+-----+ +-----+ +-----4+ +-----+ +-----+ +-----5+
| | | | | |
+-----+ +-----+ +-----+ +-----+ +-----+
| | | | | |
+-----+ +-----+ +-----+ +-----+ +-----+
| CLDTBL | | SNDCAN | | APSTBL | | SNDMON | | SNDCAN |
+-----+ +-----10+ +-----+ +-----9+ +-----10+

```

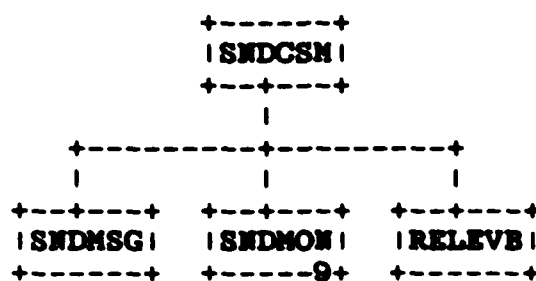
PS 620142200
1 November 1985

3



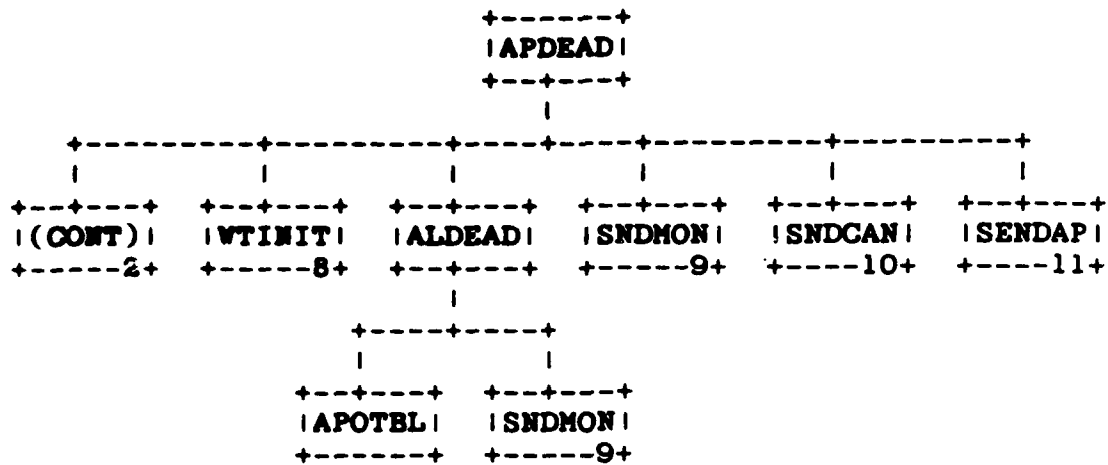
PS 620142200
1 November 1985

4



PS 620142200
1 November 1985

5



AD-A182 061

INTEGRATED INFORMATION SUPPORT SYSTEM (IISS) VOLUME 6
NETWORK TRANSACTION. (U) GENERAL ELECTRIC CO
SCHENECTADY NY PRODUCTION RESOURCES CONSU.

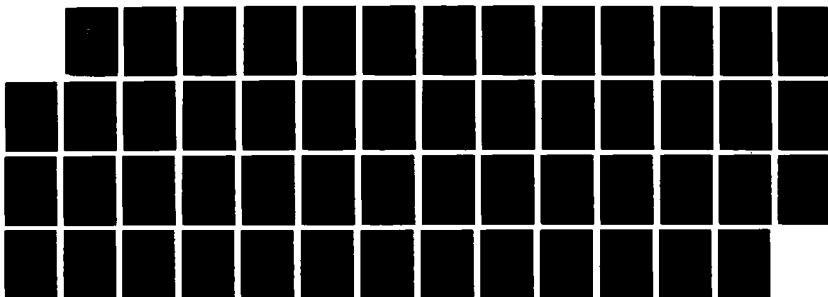
5/3

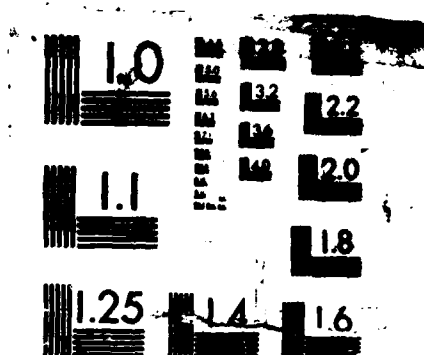
UNCLASSIFIED

01 NOV 85 PS-620142200

R RABBIN
F/G 12/7

ML

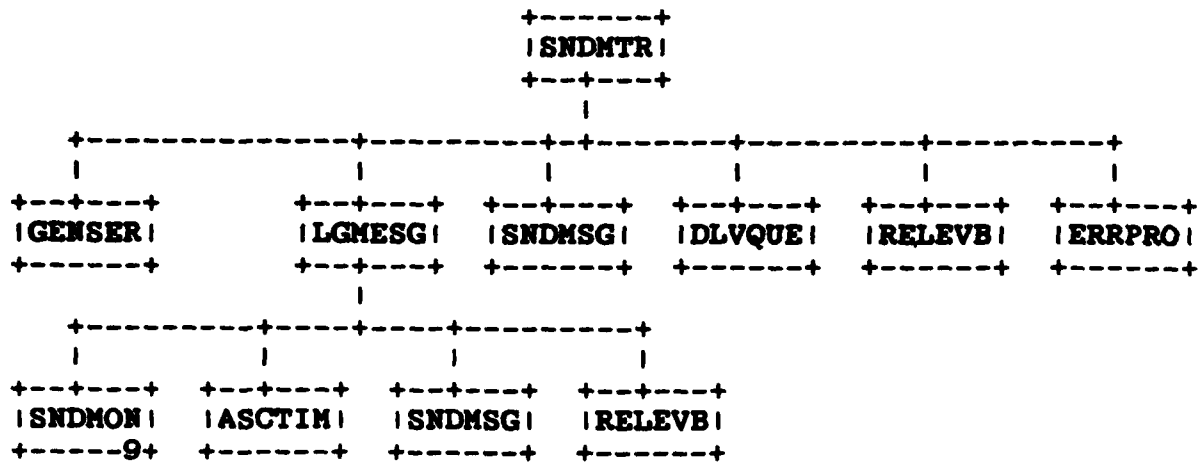




MICROCOPY RESOLUTION TEST CHART

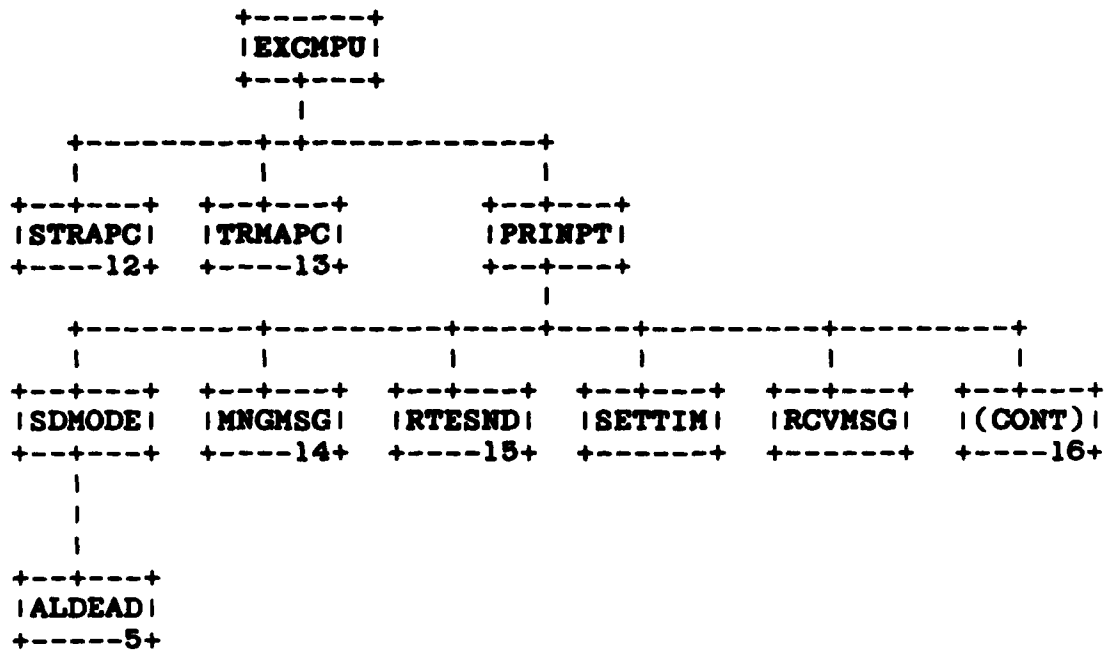
PS 620142200
1 November 1985

6



PS 620142200
1 November 1985

7



PS 620142200
1 November 1985

8

```

+-----+
|WTINIT|
+-----+
|
+-----+
|
|
+-----+ +-----+
|PFINIT| |SNDMON|
+-----+ +-----9+
|
+-----+
|
|
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|APTTEL| |DLVMSG| |APOTEL| |INITAP| |APSTEL| |(CONT)|
+-----10+ +-----17+ +-----+ +-----18+ +-----+ +-----19+

```

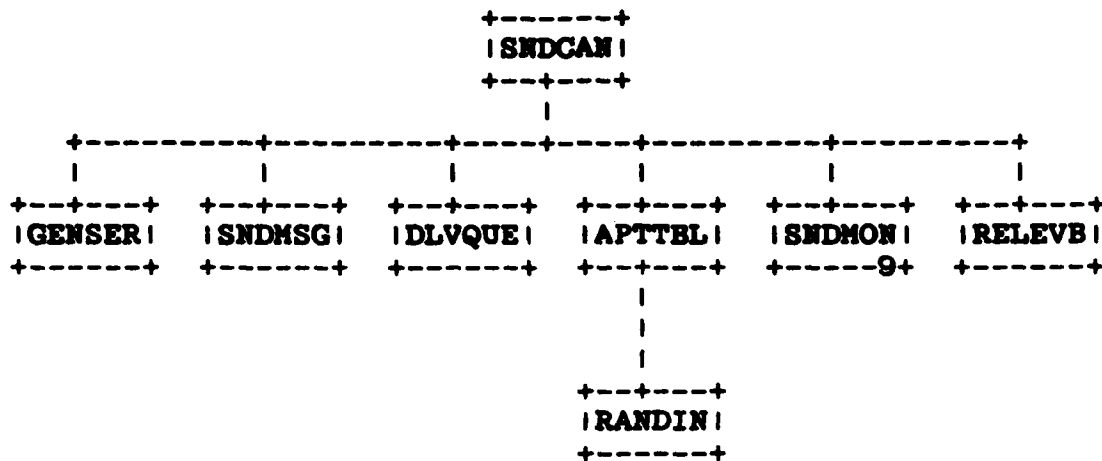
PS 620142200
1 November 1985

9

```
      +-----+  
      |SNDMON|  
      +-----+  
      |  
+-----+-----+-----+  
|         |         |         |  
+-----+-----+-----+  
|GENSER| |SNDMSG| |RELEV| |ERRPRO|  
+-----+-----+-----+  
+-----+-----+-----+  
+-----+-----+-----+
```

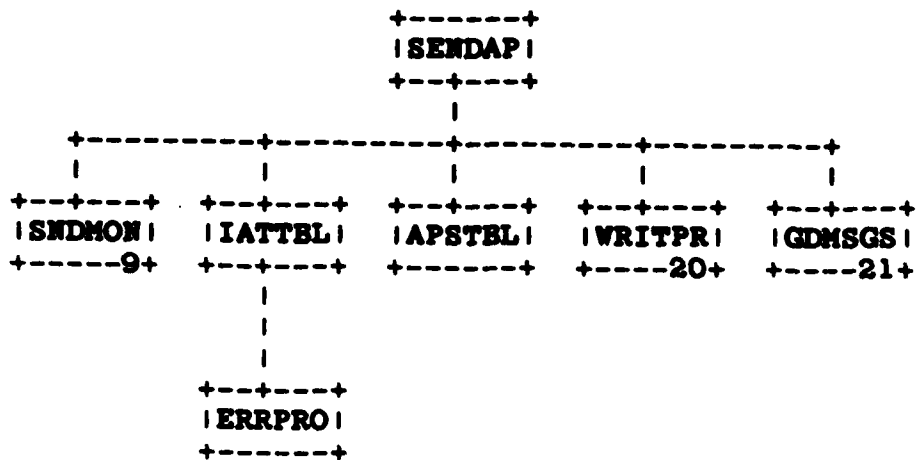
PS 620142200
1 November 1985

10



PS 620142200
1 November 1985

11



PS 62014200
1 November 1985

12

```
      +-----+  
      |STRAPC|  
      +-----+  
      |  
+-----+-----+-----+-----+-----+  
|         |         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|INITST| |SNDMTR| |SNDMON| |TABPRG| |FSTART| |GDMSG|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
| 22+   | | 6+   | | 9+   | | 23+  | | 24+  | | 21+  |
```

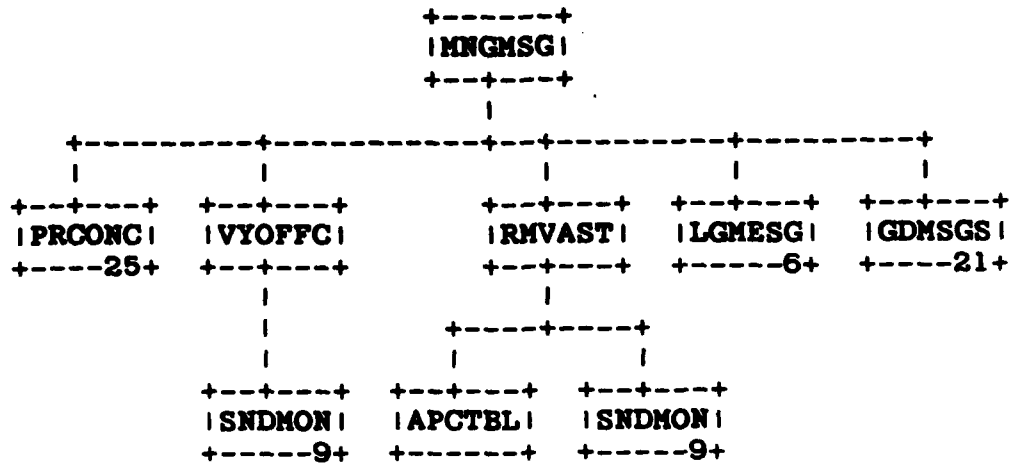
PS 620142200
1 November 1985

13

```
      +-----+  
      |TRMAPC|  
      +-----+  
      |  
+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+  
|SAVEQS| |SNDMTR| |SNDMON| |DELMBX|  
+-----+ +-----6+ +-----9+ +-----+
```

PS 620142200
1 November 1985

14



PS 620142200
1 November 1985

15

```

+-----+
|RTESND|
+-----+
|
+-----+-----+-----+-----+-----+-----+
|         |         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|MNGPRC| |APCTBL| |OFFCLQ| |DLVMSG| |SNDMON| |SNDGAN|
+-----32+ +-----+ +-----+ +-----17+ +-----9+ +-----10+
|
+-----+-----+-----+-----+-----+-----+
|         |         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|SNDMON| |SNDMSG| |RELEVB| |APCTBL| |GDMSG| |SNDGAN|
+-----9+ +-----+ +-----+ +-----+ +-----21+ +-----10+

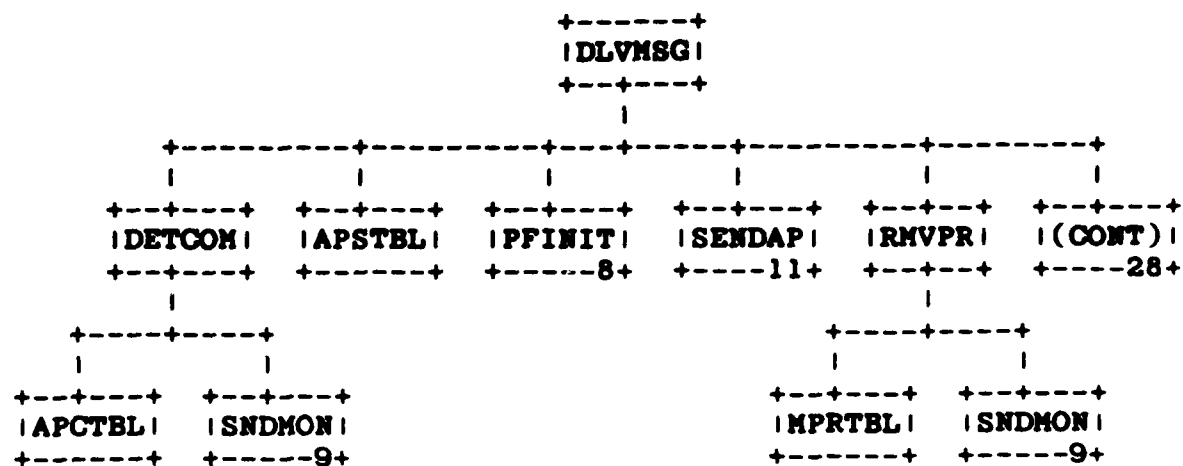
```



```
+-----+
|PRINPT|
+-----+
|
+-----+-----+-----+-----+-----+
|
|
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|(CONT)| |WAIT03| |SNDMON| |TIMCHK| |CNLTIM| |GETMSG|
+-----7+ +-----+ +-----9+ +-----+ +-----+ +-----+
|
+-----+-----+-----+-----+-----+
|
+-----+ +-----+ +-----+ +-----+ +-----+
|PAIRCK| |IATCHK| |CLDCHK| |SENDAP| |OFFCLQ|
+-----26+ +-----27+ +-----+ +-----11+ +-----15+
|
+-----+-----+-----+-----+
|
+-----+ +-----+ +-----+ +-----+
|CLDTBL| |APSTBL| |SNDMON| |SNDCAN|
+-----+ +-----+ +-----9+ +-----10+
```

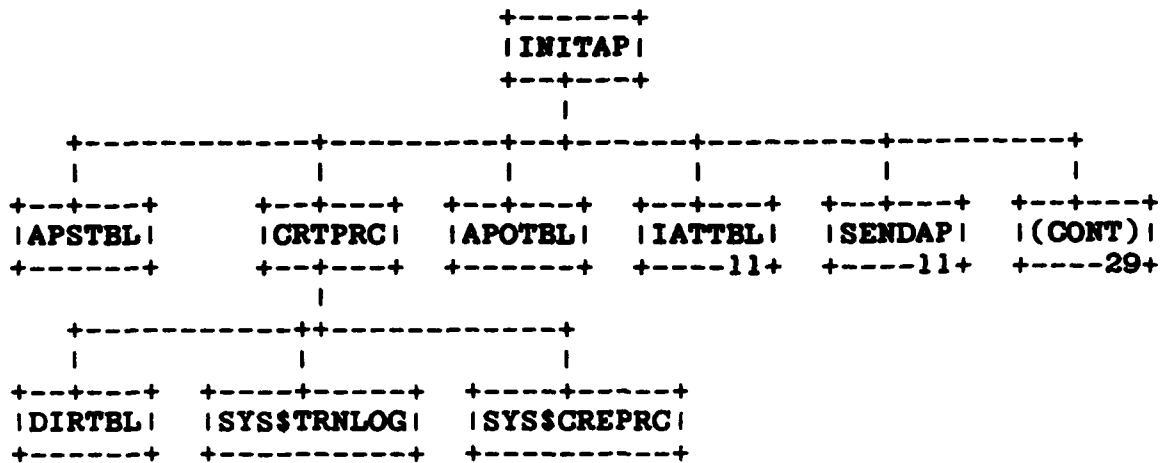
PS 620142200
1 November 1985

17



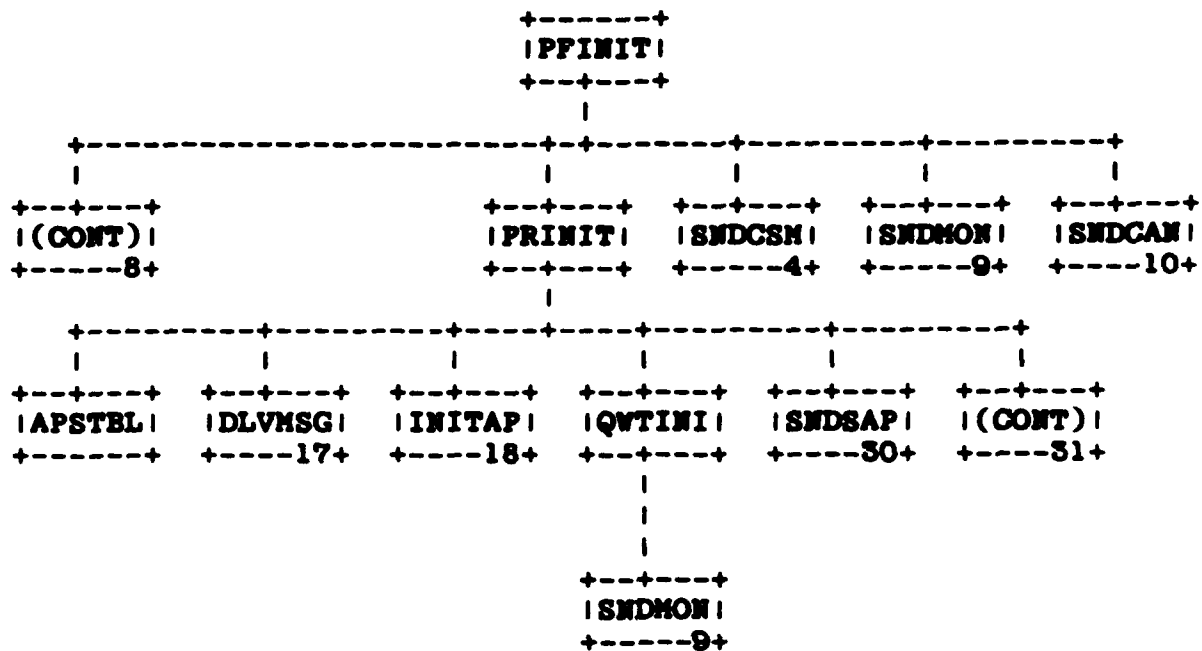
PS 620142200
1 November 1985

18



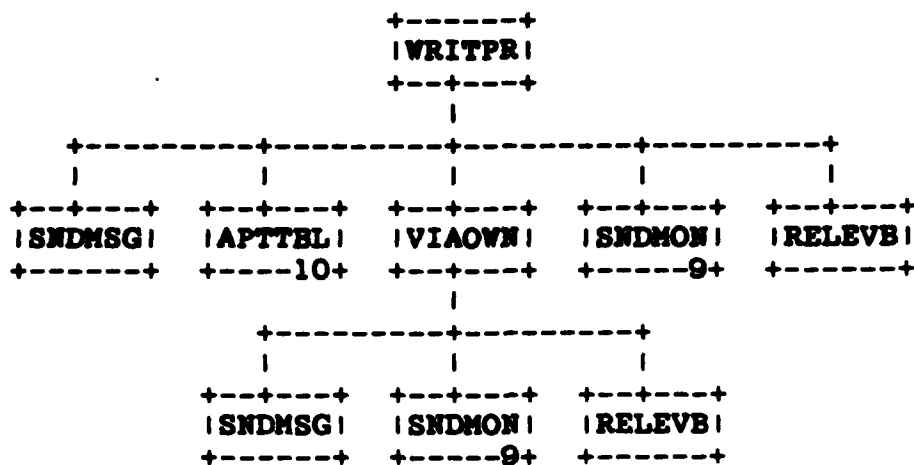
PS 620142200
1 November 1985

19



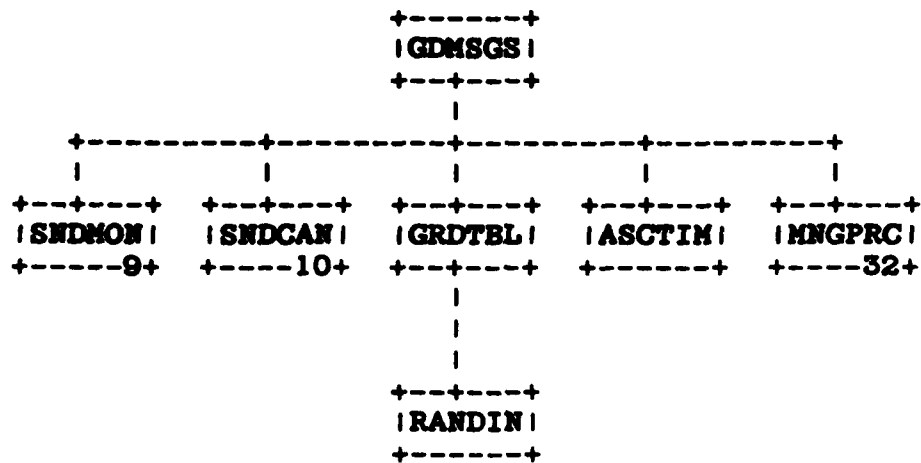
PS 620142200
1 November 1985

20



PS 620142200
1 November 1985

21



PS 620142200
1 November 1985

22

```
      +-----+  
      |INITST|  
      +-----+  
      |  
+-----+-----+-----+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+  
|GETNAM| |CRTMBX| |SNDMTR| |SNDMON|  
+-----3+ +-----+ +-----6+ +-----9+
```

PS 620142200
1 November 1985

23

```
      +-----+  
      |TABPRC|  
      +-----+  
      |  
+-----+  
|         |         |         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|RCVMSG| |SETTIM| |WAITO2| |CNLTIM| |GETMSG| |(CONT)|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
                                     +-----+  
                                     |33|
```


PS 620142200
1 November 1985

24

```
      +-----+  
      |FSTART|  
      +-----+  
      |  
+-----+-----+-----+-----+-----+-----+  
| | | | | | |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|RCVMSG| |SETTIM| |WAITO2| |CNLTIM| |GETMSG| |(CONT)|  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+34+
```

PS 620142200
1 November 1985

25

```
      +-----+
      | PROMC |
      +-----+
      |
+-----+-----+-----+-----+-----+
| +-----+ | +-----+ | +-----+ | +-----+ | +-----+ | +-----+ | | | | | |
| VMSGCT | | POSAUT | | CMPHDR | | GENSER | | ADDPR | | (CONT) |
| -----35+ | | -----36+ | | -----37+ | | -----38+ | | -----39+ |
```

PS 620142200
1 November 1985

26

```

+-----+
| PAIRCK |
+-----+
|
+-----+-----+-----+-----+
|         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+
| GETTIM | | PADZER | | MPRTBL | | VIAOWN | | SNDMON |
+-----+ +-----+ +-----+ +-----+ +-----+
|         | |         | |         | |         | |         |
+-----+ +-----+ +-----+ +-----+ +-----+

```

PS 620142200
1 November 1985

27

```
      +-----+
      | IATCHK |
      +-----+
      |
+-----+-----+-----+-----+-----+-----+
|         |         |         |         |         |         |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| IATTEL | | APSTEL | | VIAOWN | | APOTEL | | SNDMON | | SDCAN |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| -11+   | | -20+   | | -9+    | | -10+   |
+-----+ +-----+ +-----+ +-----+
```

PS 620142200
1 November 1985

28

```
      +-----+  
      |DLVMSG|  
      +-----+  
      |  
+-----+-----+-----+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+  
|(CONT)| |ERRPRO| |SNDMON| |SNDGAN|  
+-----17+ +-----+ +-----9+ +-----10+
```

PS 620142200
1 November 1985

29

```
      +-----+
      |INITAP|
      +-----+
        |
    +-----+-----+
    |         |         |
+---+---+ +---+---+ +---+---+
| (CONT) | |VIAOWN| |SNDMON|
+---18+  +---20+  +---9+

```

PS 620142200
1 November 1985

30

+--+--+--+--+
| SNDSAP |
+--+--+--+--+

+	+	+	+	+	+	+
+-----+	+-----+	+-----+	+-----+	+-----+	+-----+	+-----+
GENSER	SNDMSG	DLVQUE	APTTEL	SNDMON	RELEV8	
+-----+	+-----+	+-----+	+-----+	+-----+	+-----+	+-----+
			+-----10+	+-----9+		

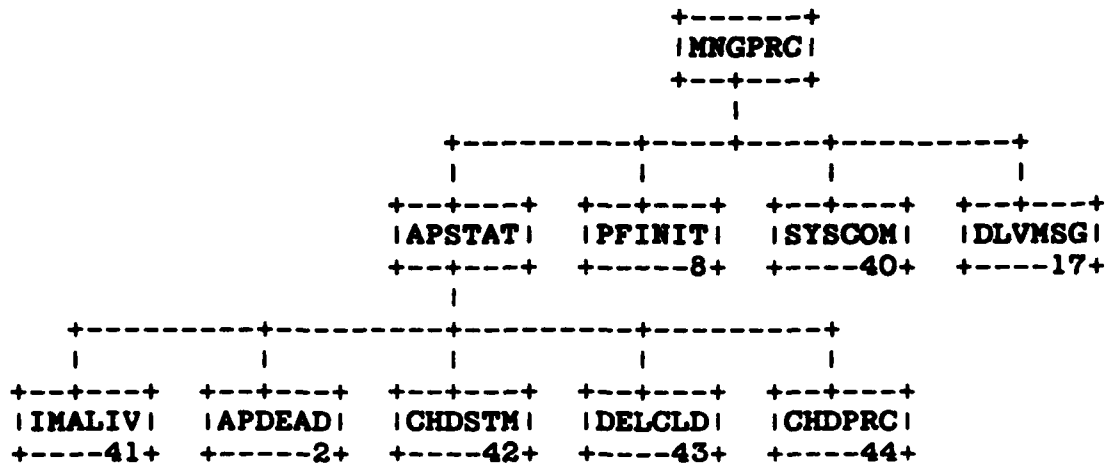
PS 620142200
1 November 1985

31

```
      +-----+  
      |PRINIT|  
      +-----+  
      |  
+-----+-----+  
|         |         |  
+-----+ +-----+ +-----+  
| (CONT) | |SNDMON| |SNDCAN|  
+-----19+ +-----9+ +-----10+
```


PS 620142200
1 November 1985

32



PS 620142200
1 November 1985

33

```

+-----+
|TABPRC|
+-----+
|
+-----+-----+-----+-----+-----+
|   |   |   |   |   |   |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|(CONT)| |GDMFIL| |APTINI| |APIINI| |APOINI| |(CONT)|
+-----23+ +-----+ +-----+ +-----+ +-----+ +-----45+

```

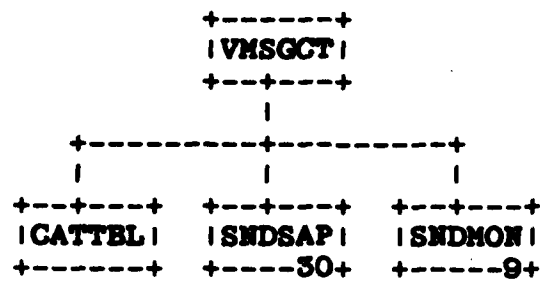
PS 620142200
1 November 1985

34

```
      +-----+
      |FSTART|
      +-----+
        |
+-----+-----+
|         |         |
+-----+ +-----+ +-----+
| (CONT) | |SNDMTR| |SNDMON|
+-----24+ +-----6+ +-----9+
```

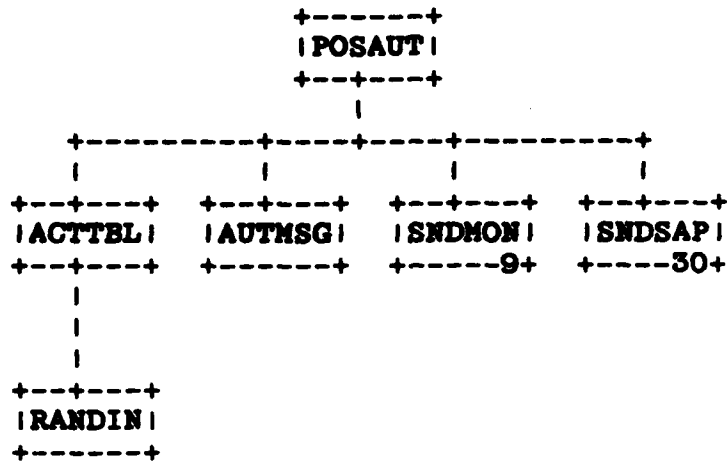
PS 620142200
1 November 1985

35



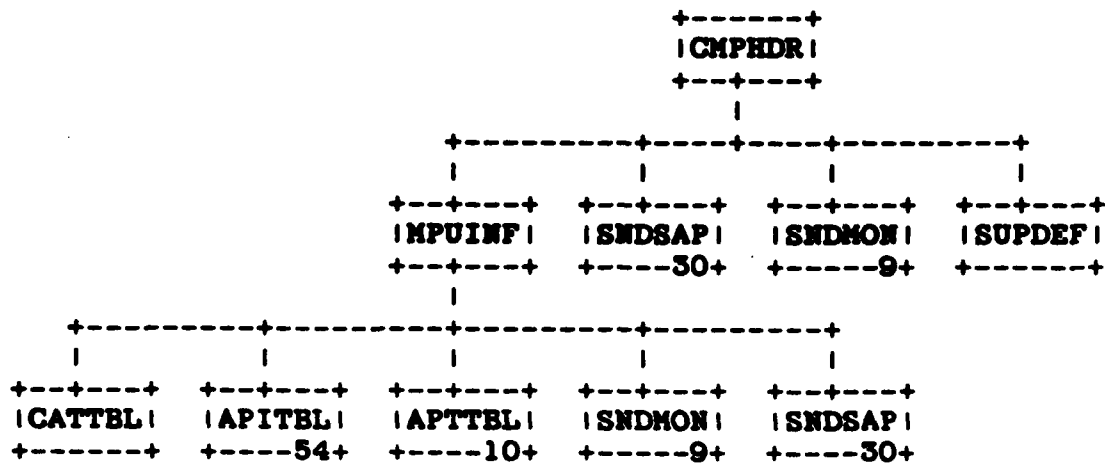
PS 620142200
1 November 1985

36



PS 620142200
1 November 1985

37



PS 620142200
1 November 1985

38

```
      +-----+  
      |ADDPR|  
      +-----+  
      |  
+-----+-----+-----+-----+-----+  
|+-----+|+-----+|+-----+|+-----+|+-----+|+-----+|  
|GETTIM| |PADZER| |MPRTBL| |SND SAP| |SND MTR| |SND MON|  
+-----+|+-----+|+-----+|+-----+|+-----+|+-----+|  
                                     -30-   -6-   -9-
```

PS 620142200
1 November 1985

39

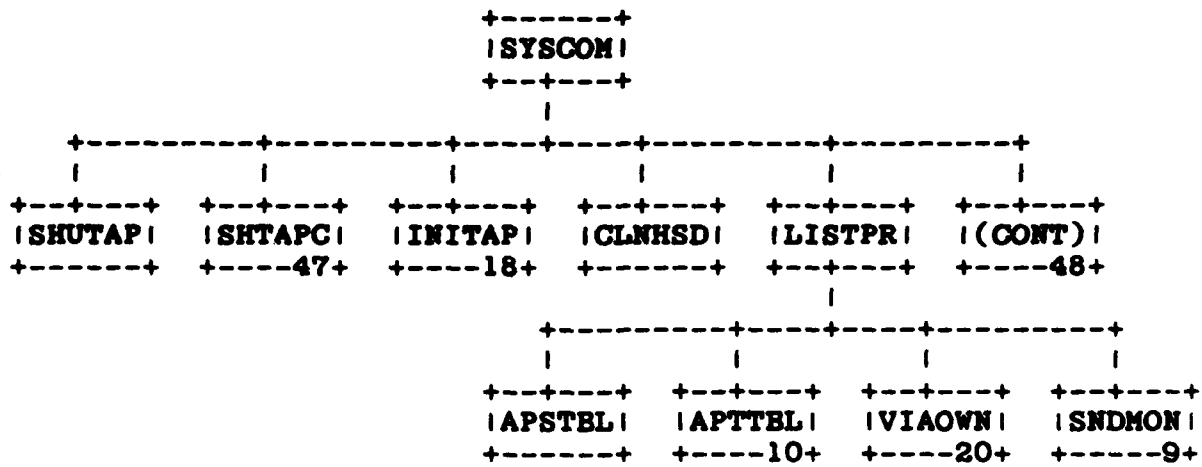
```

+-----+
| PRCONC |
+-----+
|
+-----+-----+-----+-----+-----+-----+
| | | | | | |
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
| (CONT) | | APITEL | | CHDPRC | | APSTEL | | GDMSG | | (CONT) |
+-----25+ +-----54+ +-----44+ +-----+ +-----21+ +-----46+

```

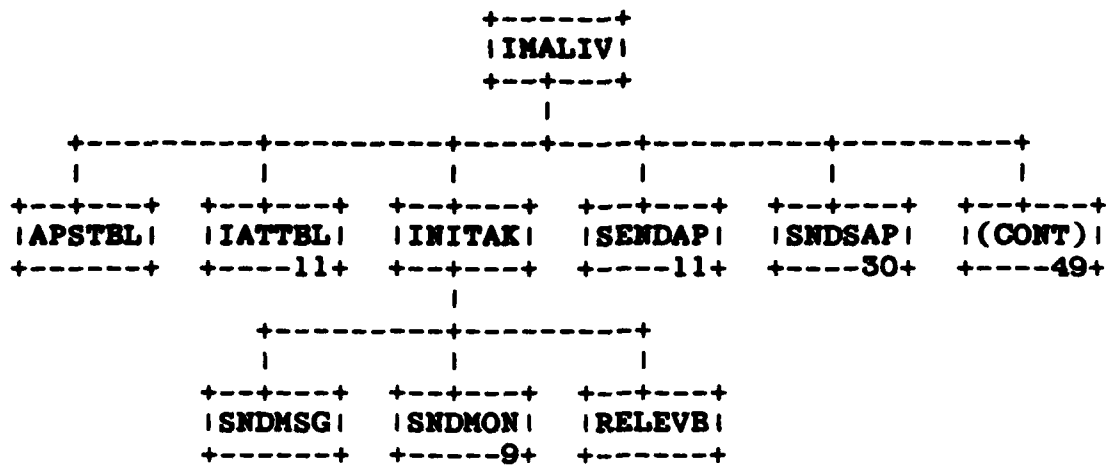

PS 620142200
1 November 1985

40



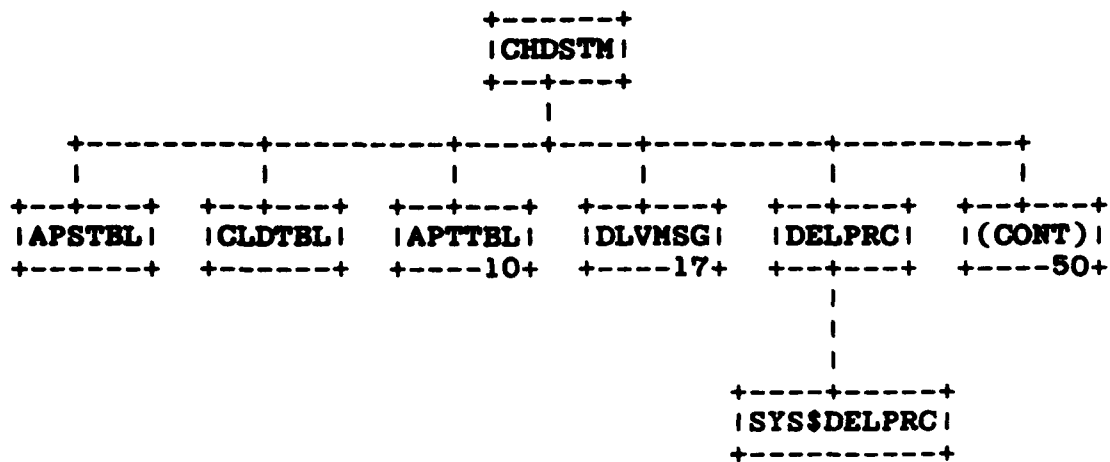
PS 620142200
1 November 1985

41



PS 620142200
1 November 1985

42



PS 620142200
1 November 1985

43

```
      +-----+  
      |DELCLD|  
      +-----+  
      |  
+-----+  
|      |      |      |      |      |  
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+  
|GLDTBL| |APTTBL| |DLVMSG| |APSTBL| |SNDMON| |SNDCAN|  
+-----+ +-----10+ +-----17+ +-----+ +-----9+ +-----10+
```

PS 620142200
1 November 1985

44

```
      +-----+  
      |CHDPRC|  
      +-----+  
      |  
+-----+  
|         |         |         |         |  
+-----+ +-----+ +-----+ +-----+ +-----+  
|APSTEL| |CLDTBL| |SNDMON| |SND SAP| |SND CAN|  
+-----+ +-----+ +-----9+ +-----30+ +-----10+
```

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```

+-----+
|TABPRC|
+-----+
|
+-----+-----+-----+-----+-----+
|
+-----+ +-----+ +-----+ +-----+ +-----+ +-----+
|(CONT)| |ACTINI| |CLDINI| |IATINI| |MPRINI| |(CONT)|
+-----33+ +-----+ +-----+ +-----+ +-----+ +-----51+

```

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```
      +-----+
      | PRCONC |
      +-----+
        |
+-----+-----+-----+-----+
|         |         |         |         |
+-----+ +-----+ +-----+ +-----+
| (CONT) | | SNDSAP | | SNDMTR | | SNDMON |
+-----+ +-----+ +-----+ +-----+
| 39+    | | 30+    | | 6+     | | 9+     |
```

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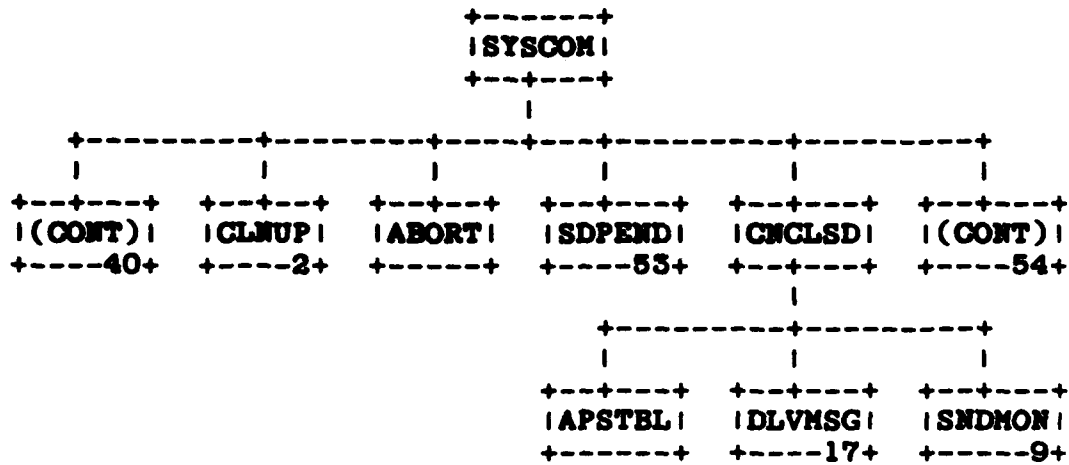
```

+-----+
|SHTAPC|
+---+---+
|
+-----+-----+-----+-----+-----+
|         |         |         |         |         |
+---+---+ +---+---+ +---+---+ +---+---+ +---+---+ +---+---+
|APSTEL| |SNDMON| |APTTEL| |SFTSD| |DELPRC| |(CONT)|
+---+---+ +---9+ +---10+ +---+---+ +---42+ +---52+
|
+-----+-----+-----+-----+
|         |         |         |         |
+---+---+ +---+---+ +---+---+ +---+---+
|SNDMSG| |APTTEL| |SNDMON| |RELEV|
+---+---+ +---10+ +---9+ +---+---+

```


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50

3-417

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```
      +-----+
      |TABPRG|
      +-----+
      |
      +-----+
      |         |         |         |
      +-----+ +-----+ +-----+ +-----+
      |(CONT)| |APSINI| |SNDMTR| |SNDMON|
      +-----+ +-----+ +-----+ +-----+
      |45|      |        | |6|      |9|
```

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```
      +-----+
      |SHTAPC|
      +-----+
      |
      +-----+-----+-----+
      |               |               |               |
      +-----+       +-----+       +-----+       +-----+
      |(CONT)|       |SDKIDS|       |APOTEL|       |SNDGAN|
      +-----47+    +-----+       +-----+       +-----10+
      |               |               |               |
      +-----+-----+-----+-----+
      |               |               |               |
      +-----+       +-----+       +-----+       +-----+
      |CLDTBL|       |VIAOWN|       |SNDMON|       |SNDGAN|
      +-----+       +-----20+    +-----9+       +-----10+
```

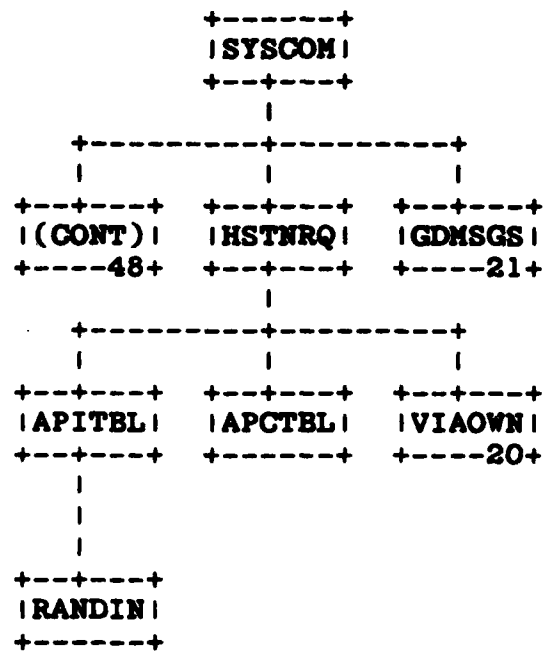
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```
      +-----+
      |SDPEND|
      +-----+
      |
      +-----+
      |         |         |
      +-----+ +-----+ +-----+
      |APSTEL| |DLVMSG| |SNDMON|
      +-----+ +-----17+ +-----9+
```

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ABORT	GETNAM.....3	SFTSD.....47
ACTINI	GETTIM	SHTAPC.....47
ACTTBL.....36	GRDTBL.....21	SHUTAP
ADDPR.....38	HSTMRQ.....54	SNDCAN.....10
ALDEAD.....5	IATCHK.....27	SNDCLN.....50
APCTBL	IATINI	SNDCSM.....4
APDEAD.....2	IATTBL.....11	SNDMON.....9
APIINI	IISYS	SNDMSG
APITBL.....54	IMALIV.....41	SNDMTR.....6
APOINI	INICHK.....1	SNDSAP.....30
APOTBL	INITAK.....41	SNDSTE.....49
APSINI	INITAP.....18	STRAPC.....12
APSTAT.....32	INITST.....22	SUPDEF
APSTBL	ITMADR	SYS\$CREPRC
APTINI	KIDST.....2	SYS\$DELPRC
APTTBL.....10	LGMESG.....6	SYS\$GETJPI
ASCTIM	LISTPR.....40	SYS\$MGBLSC
AUTMSG	MAPHST.....3	SYS\$TRNLOG
AUTTBL.....1	MNGMSG.....14	SYS\$COM.....40
CATTBL	MNGPRC.....32	TABPRC.....23
CDMFIL	MPRINI	TIMCHK.....16
CHDPRC.....44	MPRTBL	TRMAPC.....13
CHDSTM.....42	MPUGEN.....1	VIAOWN.....20
CLDCHK.....16	MPUINF.....37	VMSGCT.....35
CLDINI	MPUINI.....3	VYOFFC.....14
CLDTBL	MTRGEN	WAITO2
CLNHSD	OFFCLQ.....15	WAITO3
CLNUP.....2	PADZER	WRITPR.....20
CMPHDR.....37	PAIRCK.....26	WTINIT.....8
CNCLSD.....48	PFINIT.....8	
CNLTIM	POSAUT.....36	
CRTMBX	PRCONC.....25	
CRTPRC.....18	PRINIT.....19	
DELCLD.....43	PRINPT.....7	
DELMBX	QWTINI.....19	
DELPRC.....42	RANDIN	
DETCOM.....17	RCVMSG	
DIRTBL	RELEVB	
DLVMSG.....17	RMVAST.....14	
DLVQUE	RMVPR.....17	
ENDRUN	RTESND.....15	
ERRPRO	SAVEQS	
EXCMPI.....7	SDKIDS.....52	
FSTART.....24	SDMODE.....7	
GDMSG.....21	SDPEND.....53	
GENSER	SENDAP.....11	
GETMSG	SETTIM	

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3.11 Program Listings Comments

This information is contained in the Module Descriptions in section 3.10.

SECTION 4

QUALITY ASSURANCE PROVISIONS

4.1 Introduction and Definitions

"Testing" is a systematic process that may be preplanned and explicitly stated. Test techniques and procedures may be defined in advance and a sequence of test steps may be specified. "Debugging" is the process of isolation and correction of the cause of an error.

"Antibugging" is defined as the philosophy of writing programs in such a way as to make bugs less likely to occur and when they do occur, to make them more noticeable to the programmer and the user. In other words, as much error checking as is practical and possible in each routine should be performed.

4.2 Computer Programming Test and Evaluation

The quality assurance provisions for test consists of the normal testing techniques that are accomplished during the construction process. They consist of design and code walk-throughs, unit testing, and integration testing. These tests are performed by the design team. Structured design, design walk-through and the incorporation of "antibugging" facilitate this testing by exposing and addressing problem areas before they become coded "bugs".

END

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